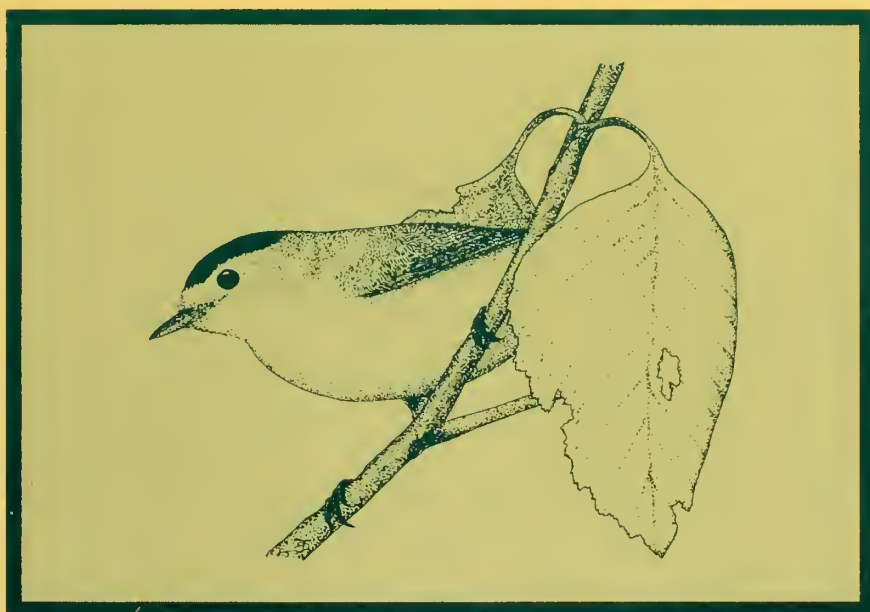


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BREEDING BIRDS *of* ONTARIO
NIDIOLOGY AND DISTRIBUTION
VOLUME 2: PASSERINES



George K. Peck and Ross D. James



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BREEDING BIRDS *of* ONTARIO
NIDIOLOGY AND DISTRIBUTION
VOLUME 2: PASSERINES

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VOLUME 2: PASSERINES

George K. Peck

and

Ross D. James



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of the Royal Ontario Museum

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Introduction

The present volume brings to completion the authors' summarization of the nidiology and distribution of Ontario's breeding birds begun with Volume 1 (Peck and James, 1983). Upon publication, a period of 20 years will have elapsed since the beginning of this ambitious project, which encompasses data spanning more than a century and a quarter, up to and including 1985 and some 1986 records.

Volume 2 of the *Breeding Birds of Ontario*, dealing with the passerines, covers 144 species. Information was processed from 67 091 nest cards to the end of the 1984 breeding season and also includes a number of 1985 and 1986 cards from which additional information could be obtained. With the inclusion of the 17 757 nest cards used for Volume 1, the total number of nest cards summarized for the two volumes was 84 848, not including 1985 and 1986 cards. Because some cards, especially those of colonial species, describe more than one nest, the number of nests involved was far in excess of the number of cards, and totalled ca 326 826. In addition, as was done for Volume 1, we have also considered all other available breeding information, both published and unpublished, including some nesting and breeding information obtained from the Ontario Breeding Bird Atlas's 1981 to 1985 survey, as well as from recent ROM and ONRS field trips.

Since the publication of Volume 1, the status of Canvasback, Bohemian Waxwing, and Northern Shrike has changed from hypothetical (unconfirmed) to confirmed breeding species, and documented nests of Tundra Swan (1979), Greater Scaup (1984), and King Eider (1947) have now been reported. Although technically still unconfirmed, the Connecticut Warbler has been treated in the regular species accounts because of the existence of specimens of flying young and a report of an undocumented nest. With the addition of five confirmed nesting species, Snowy Egret (1986), Cinnamon Teal (1983), California Gull (1981), Mountain Bluebird (1985), and Harris' Sparrow (1983), and four still unconfirmed breeding species, Trumpeter Swan (historical), Swainson's Hawk (1983), Kirtland's Warbler (1945), and Snow Bunting (1985), the Ontario breeding-bird list now totals 292 species. Included in this total are the following eight hypothetical (unconfirmed) species: Yellow-crowned Night-Heron, Trumpeter Swan, Brant, Swainson's Hawk, Short-billed Dowitcher, Western Kingbird, Kirtland's Warbler, and Pine Grosbeak (see *Unconfirmed Breeding Species*). Also included in the total are the following 10 confirmed breeding species whose nests have not yet been found and/or documented: Ross' Goose, Canvasback, Bufflehead, Surf Scoter, Pectoral Sandpiper, Stilt Sandpiper, Hudsonian Godwit, American Avocet, Bohemian Waxwing, and Northern Shrike.

The continuing changes and additions in breeding-bird information are reflected in Appendix A of this volume, which updates the status of the nonpasserines dealt with in Volume 1. Most of these changes and additions are current, but some reveal past information that has only recently been reported. A chart (Appendix B) has been included which presents a list of all Ontario breeding birds, in the 1983 American Ornithologists' Union Check-list order, with a visual outline of that portion of the nesting period indicated by egg dates.

The order and nomenclature of bird species in this volume follow those of the American Ornithologists' Union, 1983, Check-list of North American Birds, 6th edition, and the 35th supplement (1985). Plant names are based on the nomenclature used in Gleason and Cronquist (1963) if the species were included in that work.

Records and Methods

For a detailed explanation of records and methods, readers should refer to Volume 1, since these descriptions apply accurately to the text of Volume 2. Metric conversions, summarization and averaging methods, and the determination of clutch sizes, incubation periods, and egg dates remain the same as they were outlined in Volume 1.

The following abbreviations are used in this volume: AOU (American Ornithologists' Union), DBH (diameter breast height), DM (District Municipality), E (egg), NMC (National Museums of Canada—National Museum of Natural Sciences), N (nest), NWT (Northwest Territories), ONRS (Ontario Nest Records Scheme), RM (Regional Municipality), ROM (Royal Ontario Museum), ROM PR (Royal Ontario Museum Photographic Record).

The heading Records at the beginning of the Nidiology section of each species account is used synonymously for "ONRS nest-record cards". It does not necessarily indicate the number of nests considered because many cards, especially those of colonial species, list more than one nest per card. Wherever the numbers do not agree, the total number of nests is listed in parentheses after the total number of record cards. All the information in the Nidiology sections, including the data on eggs, incubation periods, and egg dates, has been derived from those cards. However, because the cards vary greatly in the amount of information they contain, the numbers of cards used for clutch sizes, incubation periods, and egg dates often do not coincide with the total number of cards considered for each species.

Nest heights, nest sizes, clutch sizes, incubation periods, and egg dates, where sufficient numbers warranted, were averaged by the interquartile range (the middle 50%) method. For an example of average-clutch-range calculation, see Volume 1, page 6. All clutch sizes shown in bold face type were those known to be successively incubated by one pair, and were considered to be complete clutches.

Brown-headed Cowbirds have parasitized a total of 86 host species in Ontario, and 2 of these, Virginia Rail and Spotted Sandpiper, may be considered unique and accidental hosts. Included among the 86 hosts are 6 known rejecter species—Eastern Kingbird, Gray Catbird, Brown Thrasher, American Robin, Cedar Waxwing, and Northern Oriole (Rothstein, 1975)—which habitually reject parasitism by egg removal. As a result the percentage of parasitism for these species is probably higher than indicated.

The percentage parasitism in the species' accounts was based only on nests whose contents were known. In general, species' clutch sizes were not used or averaged if cowbird eggs were present in the clutch. The amount of cowbird parasitism, at least for some host species, appears to be increasing in Ontario. This hypothesis appears to be supported by a comparison of parasitized Vesper Sparrow nest records in Middlesex County in the period from 1877 to 1965 (15 nests with 1 parasitized—6.5%), with those in Grey County from 1966 to 1984 (44 nests with 15 parasitized—34.1%). The Vesper Sparrow is an open-country, ground-nesting species with eggs that are readily distinguished from those of the cowbird. However, it should be noted that increased parasitism for some species is primarily evident in specific localities rather than province-wide.

Incubation periods, unless otherwise stated, represent the interval between the laying of the last egg and the beginning of hatching.

The Egg Dates subsection lists the earliest and latest dates on which viable eggs were recorded in active nests, as well as the dates for the middle 50% of those nests, thus indicating the height of the laying season. When a nest with viable eggs was visited more than once, we used the first and last egg dates recorded; thus the number of egg dates used (given in parentheses) is often greater than the number of nests considered. Egg dates for colonial species usually represent colonies with eggs in nests, rather than individual nests. Egg dates



Fig. 1 Map of northern Ontario showing provincial district boundaries and localities mentioned in the text.

were not used unless viable eggs were actually noted in the nest. Early or late nests with young, even though significant, were not used for determining estimated egg dates.

Breeding distribution information and the forest and physiographical region descriptions are the same as outlined and used in Volume 1. The maps of northern and southern Ontario (Figs. 1 and 2) are again included for easy reference; the northern Ontario map includes additional place names referred to in the species' accounts and in Appendix A. The same 52 provincial regions referred to in Volume 1 are again outlined on the breeding distribution maps and referred to in the text. The symbols used on the species maps are the same as those used in Volume 1:

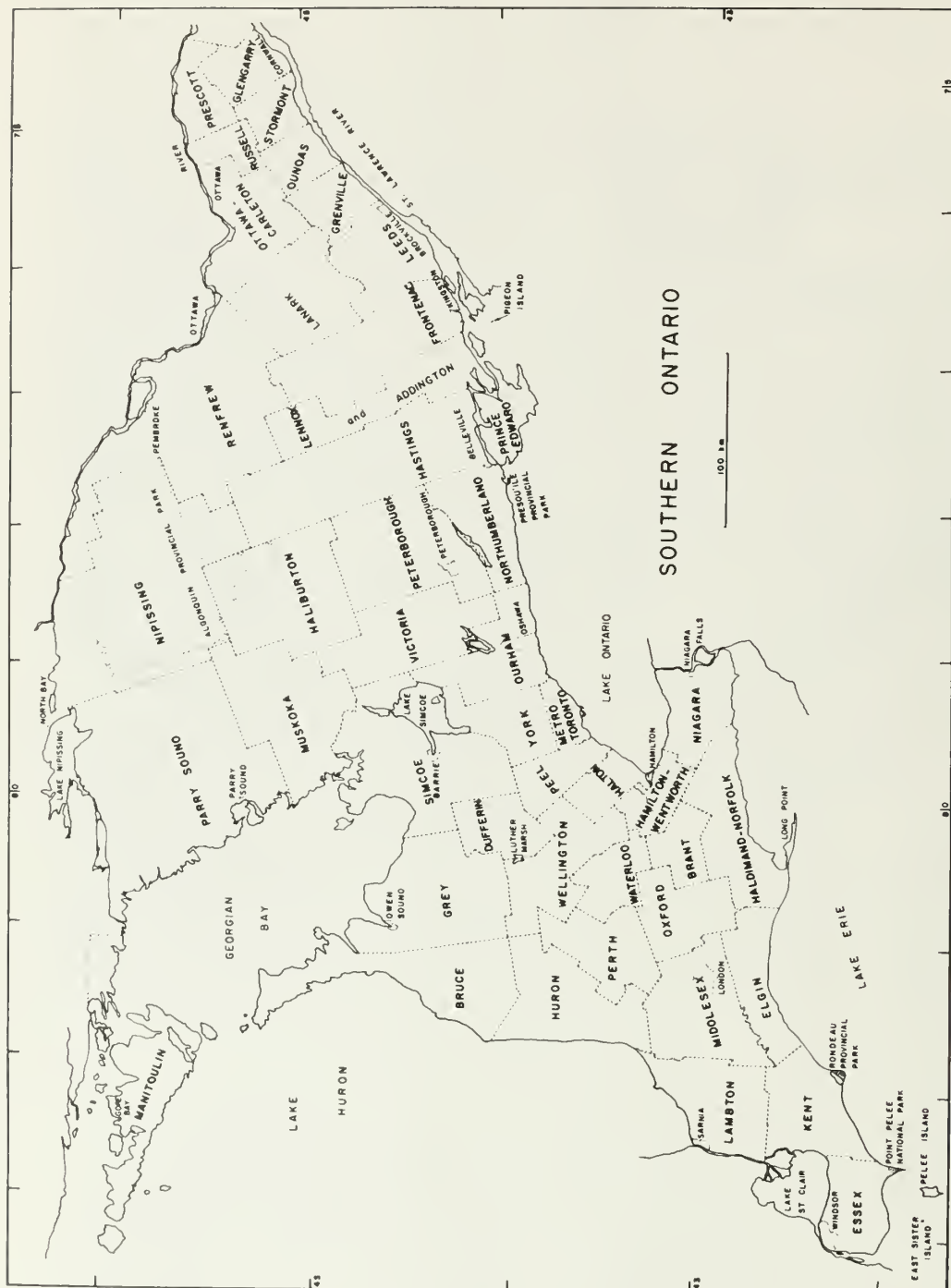


Fig. 2 Map of southern Ontario showing provincial counties, districts, regional and district municipalities, and other localities mentioned in the text.

- Nesting or breeding documented by photograph or specimen.
- ▲ Nesting or breeding as a sight record (mostly ONRS records).
- Historical nesting or breeding documented by photograph or specimen.
- △ Historical nesting or breeding as a sight record (mostly ONRS records).

Most of the map symbols represent nest records taken from the ONRS cards and include all nest and egg specimens housed in the ROM, details of which have been transferred to ONRS cards. However, many of the symbols represent breeding records, that is, reports from a variety of sources of downy young or very recently fledged young. Thus, the number of regions with symbols plotted on the breeding distribution maps may be greater than the number of regions represented by ONRS nest cards (quoted at the beginning of each species account). All available nest and breeding records up to and including 1986 have been considered for mapping.

If details of range changes or additions to the breeding-bird list of Ontario (since Baillie and Harrington, 1936, 1937) have been published, we have included references to those works. Where available details have not been published, they are included here.

The huge amount of data summarized for this volume has revealed some unique and/or interesting information about the nesting passerines of Ontario, some examples of which follow:

1) *Nest habitats*: 96% of Eastern Phoebe nests and 88.2% of Barn Swallow nests were on manmade structures; first tundra nesting of Eastern Kingbird; most Purple Martin nests were near permanent water.

2) *Nest locations*: a Horned Lark's nest between two railroad ties was passed over by a train at least twice daily; Tree Swallow nests in a floating tree trunk and in a howitzer barrel; Northern Rough-winged Swallow nests in a woodpecker cavity and in an old Cliff Swallow nest; Sedge Wren nests were rarely over water; a nest with young European Starlings in a half-submerged boiler tank with waves regularly splashing over the nest's entrance; a Red-winged Blackbird nest in a deep cavity of an elm tree.

3) *Nest heights*: 25% of Brown Thrasher nests were on the ground; an elevated nest of Nashville Warbler in the roots of a fallen hemlock; a Canada Warbler nest at 0.9 m (3 ft) in a sapling maple tree; a Savannah Sparrow nest at 0.3 m (1 ft) in a small cedar tree; 39% of 774 Song Sparrow nests were elevated from 0.07 to 3.7 m (0.25 to 12 ft); a nest of Common Grackle on the ground.

4) *Nest structures and materials*: a five-tiered Eastern Phoebe nest, the result of annual additions; a squirrel's tail in the lining of a Great Crested Flycatcher's nest; the dome and spout of Cliff Swallow nests were often formed and completed during egg laying and incubation; nest cavities of Red-breasted Nuthatches were usually excavated while those of White-breasted Nuthatches were usually not; unlike Marsh Wrens, Sedge Wrens characteristically included green (living) stalks of vegetation in their nest exteriors; nests of Yellow-rumped Warblers were characteristically lined with feathers.

5) *Colonial species*: 37% of Northern Rough-winged Swallow nests were in colonies; 25 nests of American Robin were found on the girders of a single highway bridge and approximated a colonial situation.

6) *Hybridization*: an Eastern Bluebird female mated to a Mountain Bluebird male were found at a bird-box nest in 1985; a nest with 4 eggs was the result of a rarely reported mating of 2 hybrid warblers, "*Vermivora leucobronchialis*" ("Brewster's Warbler"); a female Yellow Warbler mated to a male Prothonotary Warbler produced hybrid young in Welland County in 1956; at 1 nest hybridization of Eastern and Western meadowlarks was reported.

7) *Eggs*: second clutches and late-season clutches averaged smaller in size; a nest of

Chestnut-sided Warbler containing 1 egg was reported, from which a single young hatched and fledged; several species incubated and hatched young from 2-egg clutches (e.g., Chipping Sparrow, Song Sparrow, etc.); 1 completed nest of Eastern Kingbird remained empty for 3 weeks before eggs were laid; Northern Rough-winged Swallow clutches averaged larger than Bank Swallow clutches.

8) *Incubation periods*: delays in the onset of incubation of as long as a week were reported for Eastern Bluebird, and 10 days for House Wren; short incubation periods and hatching times of 2 or more days were often an indication of incubation commencing before the last egg was laid (e.g., Barn Swallow, House Wren, Cedar Waxwing, etc.).

9) *Multiple broods*: 3 broods were reported for Eastern Phoebe, Eastern Bluebird, American Robin, Chipping Sparrow, and House Sparrow.

10) *Egg dates*: the earliest passerine egg date for Ontario was 3 March for American Crow, and the latest was 24 September for American Goldfinch; a Red Crossbill nest was under construction on 16 February, and an Eastern Bluebird deserted its fourth nesting in the same box in October.

11) *Cowbird parasitism*: only 19.6% of hosts' nests were on the ground; because of the more northerly breeding distribution of the Alder Flycatcher only 14.9% of its nests were parasitized, as compared with 26.8% for Willow Flycatcher; a Wood Thrush nest contained 1 thrush egg and 12 cowbird eggs, and a Song Sparrow nest contained 1 sparrow egg and 10 cowbird eggs; 35.3% of the cavity nests of the Prothonotary Warbler were parasitized; in Grey County 73% of Purple Finch nests were parasitized; although House Finch nests were heavily parasitized (42.2%), cowbird young in House Finch nests invariably died before fledging, apparently because of an improper diet.

Photographic Figures The photographs (Figs. 143 to 206) depict typical Ontario habitats and some of the breeding species associated with them, and generally are presented starting in the north of the province and proceeding progressively in a southerly direction. In addition, photographs of a number of other species are presented, particularly those that are rare or remote breeders or are of special interest. These photographs were chosen to help readers better understand the written descriptions of habitats, nest locations, and breeding birds.

Breeding Bird Species

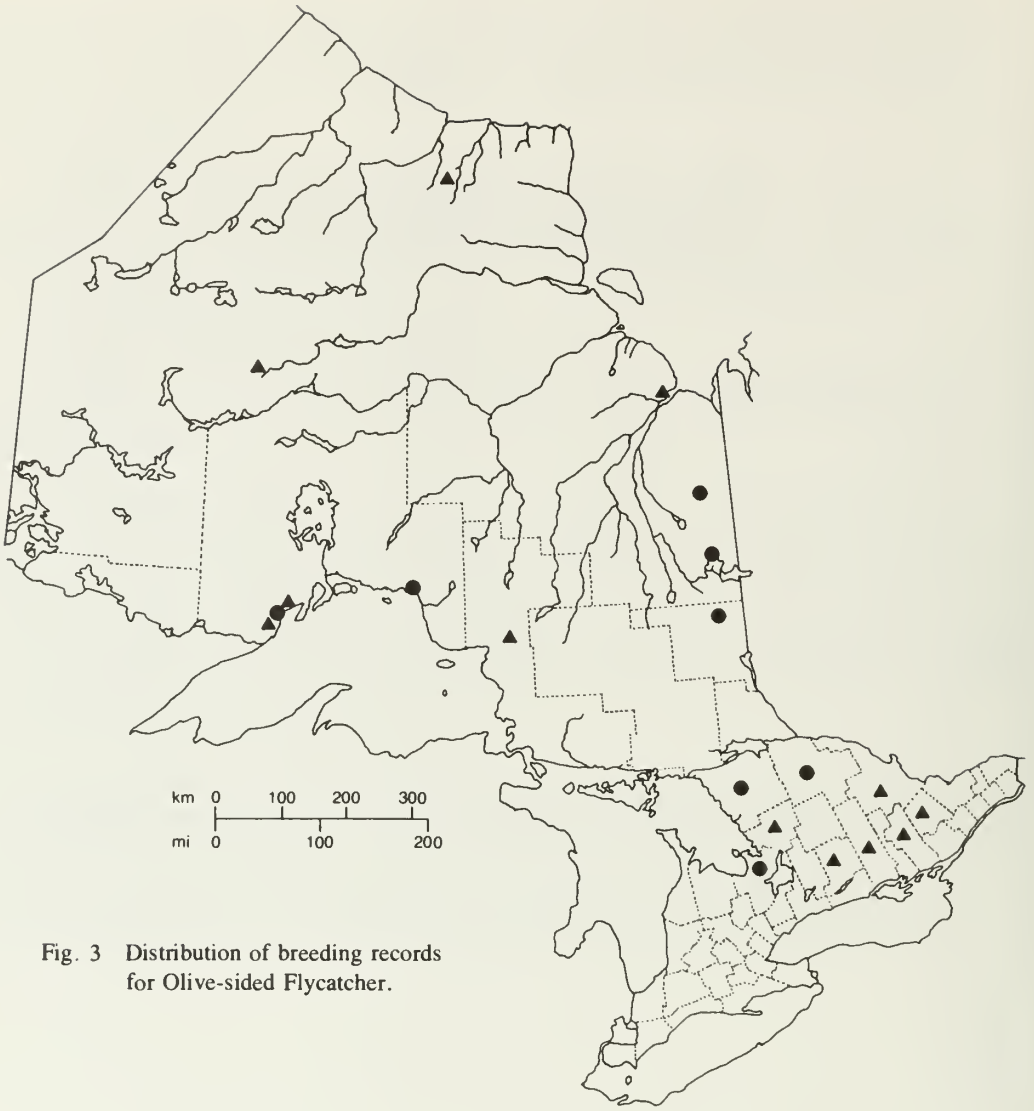


Fig. 3 Distribution of breeding records for Olive-sided Flycatcher.

Olive-sided Flycatcher, *Contopus borealis* (Swainson)

Nidiology

RECORDS 18 nests representing 12 provincial regions.

Breeds in semi-open, coniferous and mixed woodlands, most often in wet, but occasionally in dry, terrain. Black spruce bogs and burns, jack pine stands and burns, mixed woods, and the treed edges of beaver ponds and cattail marshes were the selected nesting habitats.

Nests were positioned almost invariably on horizontal limbs of conifers, with black and white spruce (14 nests), jack pine (2 nests), and balsam fir (1 nest) chosen as the nest trees. One nest tree in a burnt area was dead; another nest tree had a DBH of 9.7 cm (3.8 inches). Eleven nests were placed on horizontal branches from 0.3 to 2.5 m (1 to 8 ft) from the trunk, and 2 of these were at the end of the branch. A twelfth nest was placed against the trunk. Heights of 18 nests ranged from 4 to 15 m (13 to 50 ft), with 9 averaging 7 to 10 m (25 to 35 ft).

Nests (Fig. 156A) were usually well concealed in foliage, but 1 nest was noted to be conspicuous. They were described as bulky structures or bowls, 2 shallow, and 1 flimsy. Nests were composed of interwoven conifer twigs combined with rootlets, grasses, straw, mosses, lichens, and pine needles; they were lined with lichens, mosses, fine twigs, and rootlets. Four nests had outside diameters ranging from 9.5 to 14 cm (3.7 to 5.5 inches), inside diameters from 5 to 6.5 cm (2 to 2.5 inches), outside depths from 6 to 9 cm (2.4 to 3.5 inches), and inside depths from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 10 nests with 1 to 4 eggs; 1E (1N), 2E (2N), 3E (6N), 4E (1N).

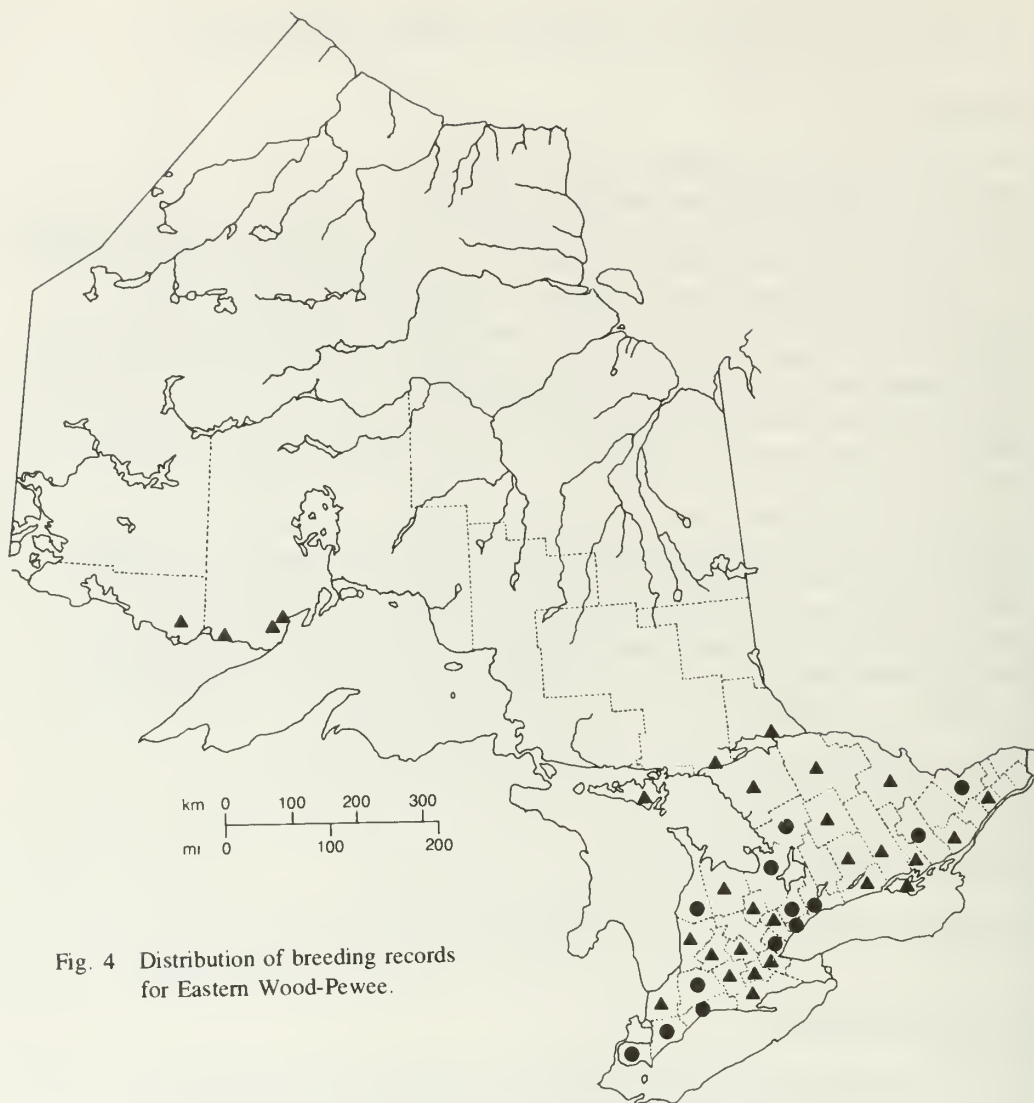
Average clutch range 3 eggs (6 nests).

INCUBATION PERIOD No information.

EGG DATES 10 nests, 6 June to 24 June (13 dates); 5 nests, 16 June to 21 June.

Breeding Distribution

The Olive-sided Flycatcher breeds throughout the forested portions of northern Ontario. In the south it is restricted almost entirely to the area occupied by Canadian Shield as far south as central Frontenac County.



Eastern Wood-Pewee, *Contopus virens* (Linnaeus)

Nidiology

RECORDS 204 nests representing 36 provincial regions.

Breeds most often in deciduous woods (47 nests), occasionally in mixed woods (19 nests), and rarely in coniferous woods (3 nests). Sometimes (22 nests) more open terrain was selected, such as farm orchards, hedgerows, brushy fields, residential gardens, parks, and campgrounds. Breeding habitats revealed a definite preference for open areas near the nest, and these included forest edges and clearings, roadways, and water. Most nest habitats were in dry locations, and those in wet areas may have only indicated the preference for open space near the nest tree.

Nests were almost invariably in trees (1 nest in a shrub), usually living but occasionally dead, and the actual nest limbs were often dead (32 nests). Deciduous trees (19 spp., 156 nests) were greatly preferred over coniferous (3 spp., 12 nests). Trees selected most commonly were elm spp. (42 nests), oak spp. (30 nests), maple spp. (25 nests), birch spp. (16 nests), and apple (10 nests). Many nest trees were large and mature, and 1 elm had a DBH of 18 cm (7 inches). Most nests were placed well out from the main trunk on horizontal or nearly horizontal limbs, and either were at natural forks and forks created by the intersection of 2 limbs, or were saddled on the upper surface of a limb. Nest limbs (4 nests) had diameters of 3.8 to 5 cm (1.5 to 2 inches), and the distance from the trunk of 52 nests ranged from 0.6 to 6 m (2 to 20 ft), with 26 averaging 1.5 to 3 m (5 to 10 ft). Heights of 167 nests ranged from 1.8 to 21 m (6 to 70 ft), with 83 averaging 4.5 to 9 m (15 to 30 ft).

Nests were well-made, shallow cups or bowls, almost invariably covered on the outside with gray or greenish lichens which rendered them inconspicuous. These lichen fragments were usually held in place by strands of spider webs. The basic structure was woven, in order of preference, of grasses, weed stems and plant fibres, plant down or wool, bark strips, twigs and roots, fruit stems, mosses, pine needles, horse hair, and pieces of leaves and other vegetation. Lining material consisted of down and hair, grasses, plant stems and fibres, bark strips, pine needles, rootlets, mosses, and lichens. Two nests were thin and poorly made, with the eggs resting on the bare branch beneath the nest. Ten nests had outside diameters ranging from 7.5 to 8.5 cm (3 to 3.3 inches), inside diameters from 4.5 to 5 cm (1.8 to 2 inches), outside depths from 3 to 4.5 cm (1.2 to 1.8 inches), and inside depths from 1.5 to 3 cm (0.6 to 1.2 inches).

EGGS 103 nests with 1 to 4 eggs; 1E (1N), 2E (27N), 3E (64N), 4E (11N).

Average clutch range 3 eggs (64 nests).

Cowbird parasitism 117 nests with 6 parasitized (5.1%).

INCUBATION PERIOD No information.

EGG DATES 94 nests, 3 June to 14 August (99 dates); 47 nests, 19 June to 5 July.

Breeding Distribution

The Eastern Wood-Pewee (Fig. 167) breeds throughout southern Ontario, but in the north it is found only about as far north as Sioux Lookout and Kirkland Lake.

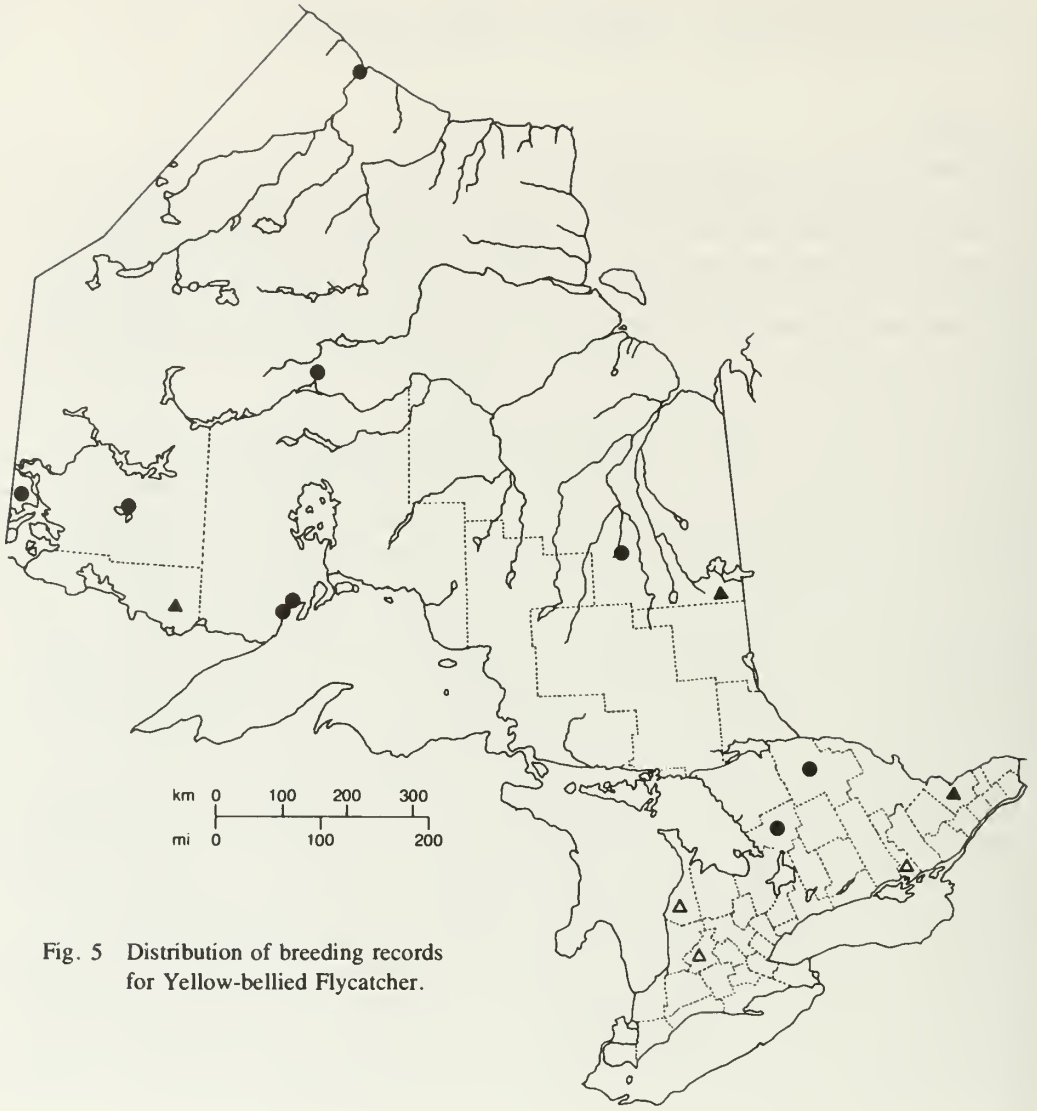


Fig. 5 Distribution of breeding records for Yellow-bellied Flycatcher.

Yellow-bellied Flycatcher, *Empidonax flaviventris* (Baird & Baird)

Nidiology

RECORDS 16 nests representing 8 provincial regions.

Breeds most often in sphagnum and heath bogs and similar wet areas (7 nests), with black spruce as the dominant tree species, and, to a lesser extent, tamarack, cedar, and balsam fir. Dry, mixed woodlands (3 nests) were also reported as breeding habitats. Moist or wet locations (9 nests) were preferred to dry (3 nests); 1 nest was found near an island marsh.

Nests were positioned on the ground in moss (usually sphagnum spp.) (8 nests), in grass (1 nest), and in leaves (1 nest). Moss hummocks (1 nest in a grass hummock) and moss-covered logs were often selected as nest sites; 1 nest was beneath a small wild cherry tree; 1 was among bunchberries.

Nests were small cups composed of mosses, dead plant stems and fibres, grasses, and rootlets. Linings were of dead grasses (1 nest of sedge). Six nests had outside diameters ranging from 8 to 9.5 cm (3.1 to 3.7 inches), inside diameters from 4.5 to 5.5 cm (1.8 to 2.2 inches), outside depths from 3.5 to 5.5 cm (1.4 to 2.2 inches), and inside depths from 3 to 3.5 cm (1.2 to 1.4 inches).

EGGS 14 nests with 2 to 5 eggs; 2E (2N), 4E (10N), 5E (2N).

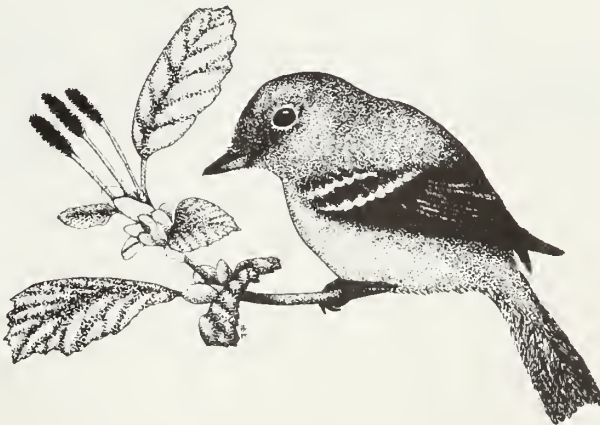
Average clutch range 4 eggs (10 nests).

INCUBATION PERIOD 1 nest, at least 13 days.

EGG DATES 11 nests, 18 June to 20 July (13 dates); 6 nests, 20 June to 1 July.

Breeding Distribution

The Yellow-bellied Flycatcher (Fig. 156B) breeds throughout the forested parts of northern Ontario, extending into the south in small numbers as far as Muskoka District and Ottawa. Formerly it was reported south to Perth County and the north shore of Lake Ontario.



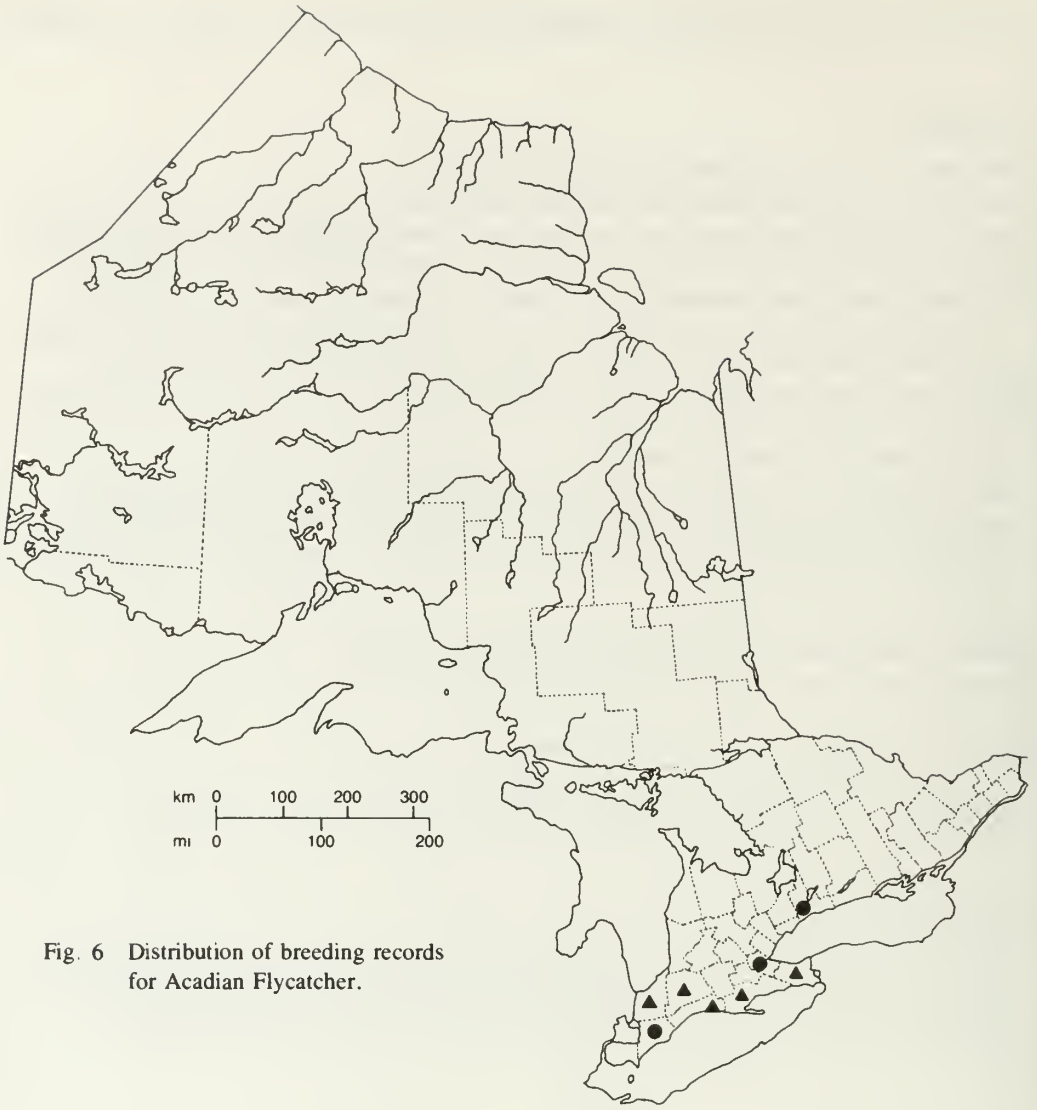


Fig. 6 Distribution of breeding records for Acadian Flycatcher.

Acadian Flycatcher, *Empidonax virescens* (Vieillot)

Nidiology

RECORDS 33 (36 nests) representing 7 provincial regions.

A bird of the Deciduous Forest region, Acadian Flycatchers breed usually in mature, deciduous woods (principally beech/maple) (Fig. 195), in both wet and dry areas. One nest was reported in a wooded sand-dune location. Open spaces were a prerequisite, and thus nests were usually at clearings, or near or over roads, and 1 was near a parking lot. Another nest was reported in a heronry.

Nests were invariably in living, deciduous trees (often saplings, 7 nests) of 3 species: beech (17 nests), maple spp. (6 nests), and yellow birch (1 nest). The majority of nests were on a low, or the lowest, drooping, horizontal limb from 0.5 to 3.5 m (1.5 to 11 ft) from the trunk, and were often near the end of the limb. They were usually suspended from forks or crotches, but 1 nest was saddled on a limb and 2 twigs. Heights of 24 nests ranged from 2 to 9 m (6 to 30 ft), with 12 averaging 3 to 6 m (9 to 20 ft).

Nests were flimsy, shallow, semi-pensile baskets, characteristically having strands of vegetation dangling below them, which ranged from 10 to 30.5 cm (4 to 12 inches) in length. Nest structures were formed of fine grasses, vine tendrils, plant down, spider webs, and bits of leaves and other vegetative debris. They were thinly lined with grasses, rootlets, and bark strips. In at least 1 nest, eggs were visible through the bottom of the nest. Eight nests had outside diameters ranging from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 3.5 to 6.5 cm (1.4 to 2.6 inches), and inside depths from 2 to 3 cm (0.8 to 1.2 inches).

EGGS 15 nests with 1 to 3 eggs; **1E** (2N), **2E** (3N), **3E** (10N).

Average clutch range 3 eggs (10 nests).

Cowbird parasitism 20 nests with 3 parasitized (15%).

INCUBATION PERIOD No information.

EGG DATES 16 nests, 10 June to 30 July (21 dates); 8 nests, 14 June to 7 July.

Breeding Distribution

Nesting of the Acadian Flycatcher (Fig. 196B) is very local and is regular only in the provincial regions adjacent to Lake Erie, with isolated pairs reported elsewhere in the Deciduous Forest region.

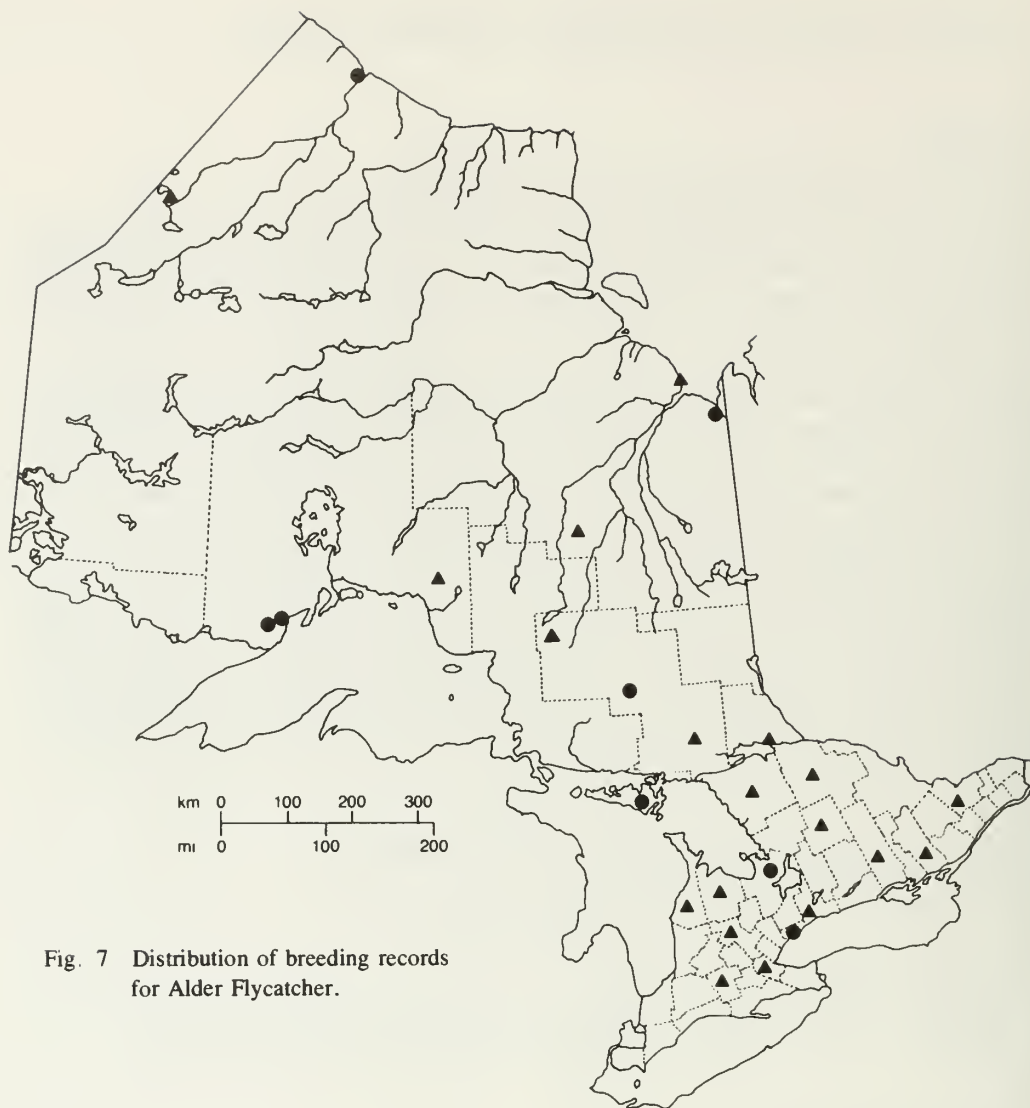


Fig. 7 Distribution of breeding records for Alder Flycatcher.

Alder Flycatcher, *Empidonax alnorum* Brewster

Nidiology

RECORDS 48 nests representing 16 provincial regions.

Unlike the Willow Flycatcher, the Alder Flycatcher breeds more often in wet areas (Fig. 159) than in dry, but on occasion it may be found breeding with the Willow Flycatcher in the same habitat. Preferred habitats were damp fields and meadows, usually fairly open, but sometimes thickly overgrown, predominantly with willow. The latter was often accompanied by alder, dogwood, cedar, tamarack, spruce, poplar, birch, hawthorn, elm, hazel, and maple species. Such areas frequently bordered marshes, bogs, and occasionally mixed and deciduous woods. One nest was in open muskeg.

Most nests were positioned in deciduous shrubs, trees, and vines (13 spp., 35 nests), occasionally in conifers (2 spp., 3 nests), and rarely in grass and weeds (1 nest). The shrubs or trees chosen most commonly were willow spp. (9 nests), dogwood spp. (6 nests), beaked hazel (3 nests), and hawthorn spp. (3 nests). Nests were usually in crotches, but occasionally were attached to upright stalks. Heights of 39 nests ranged from 0.3 to 1.8 m (1 to 6 ft), with 20 averaging 0.6 to 0.9 m (2 to 3 ft).

Nest structures (Fig. 162A) were variously described as bulky to compact, closely woven to flimsy, and often with materials dangling below the nest. They were more often well concealed than not, and were formed of grasses, plant stalks and fibres, plant down, mosses, bark fibres, twigs, rootlets, yarn, feathers, pine needles, and cobwebs. Linings were of fine grasses and cattail down. Eight nests had outside diameters ranging from 7.7 to 10.5 cm (3.0 to 4.1 inches), inside diameters from 4.5 to 5.5 cm (1.8 to 2.2 inches), outside depths from 5.5 to 15 cm (2.2 to 6 inches), and inside depths from 3.3 to 5 cm (1.3 to 2 inches).

EGGS 40 nests with 1 to 5 eggs; 1E (2N), 2E (4N), 3E (16N), 4E (17N), 5E (1N).

Average clutch range 3 to 4 eggs (33 nests).

Cowbird parasitism 47 nests with 7 parasitized (14.9%).

INCUBATION PERIOD 1 of 11 days, 1 of at least 11 days, 1 of ca 11 days.

EGG DATES 40 nests, 15 June to 22 July (52 dates); 20 nests, 22 June to 1 July.

Breeding Distribution

The Alder Flycatcher (see Fig. 161) is found throughout Ontario in summer, with the exception of tundra areas; it is scarce in the south near Lake Erie.

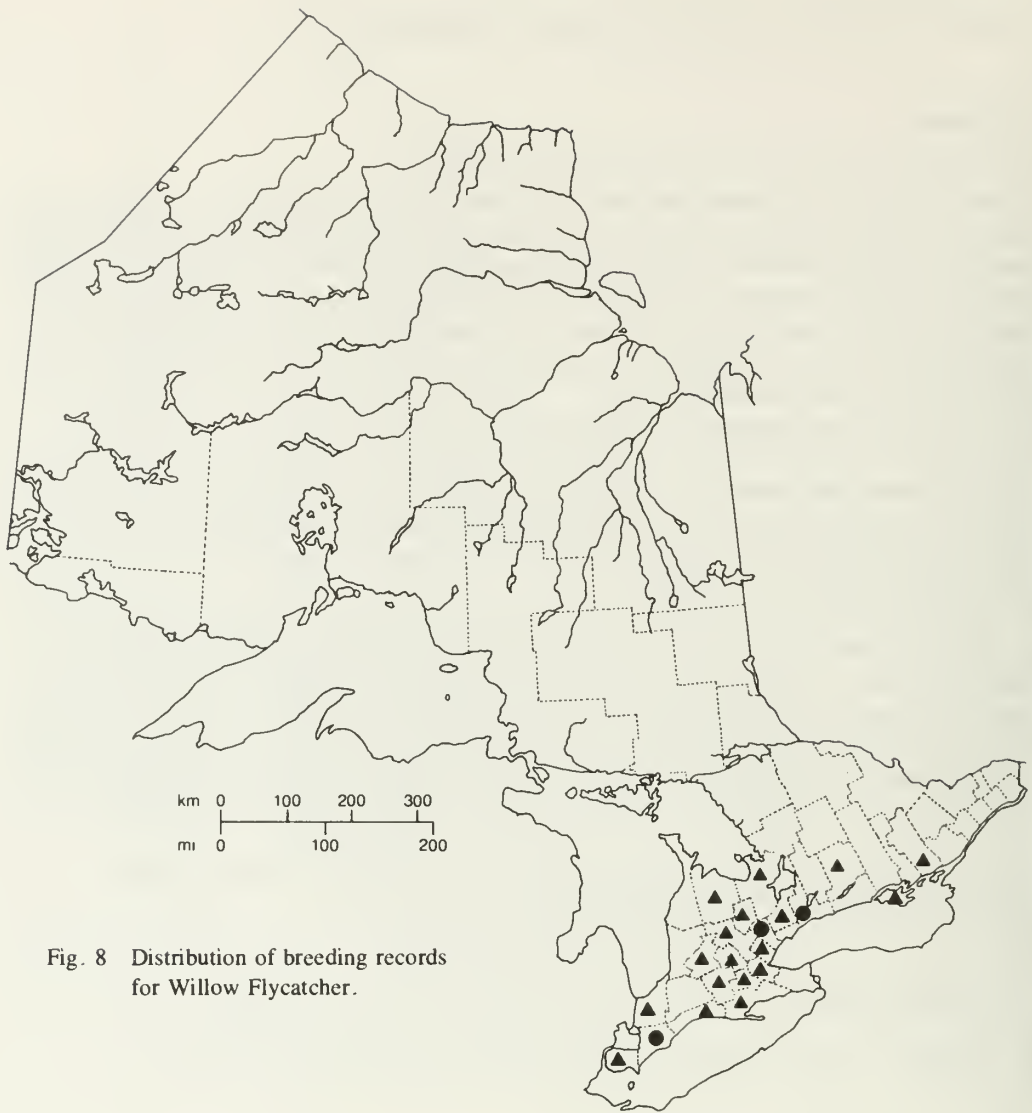


Fig. 8 Distribution of breeding records for Willow Flycatcher.

Willow Flycatcher, *Empidonax traillii* (Audubon)

Nidiology

RECORDS 82 nests representing 18 provincial regions.

Breeds most commonly in shrubby fields and pastures (56 nests) with hawthorn predominating, but often accompanied by apple, dogwood, willow, and other trees and shrubs; less often in willow or willow/dogwood thickets, fields, or marsh borders (11 nests); occasionally in conifer plantations with some deciduous trees (4 nests); on a dogwood ridge in a marsh (2 nests); on a small river island (2 nests); and in an alder thicket (1 nest). Dry areas were reported more often than wet; both were of doubtful significance and probably indicated only the preferred nest shrub or tree habitat.

Nests were randomly positioned most often in deciduous trees or shrubs (11 spp., 70 nests), and rarely in coniferous trees (1 sp., 1 nest). Those chosen most commonly were hawthorn spp. (38 nests), apple (10 nests), dogwood spp. (9 nests), and willow spp. (5 nests). Nests were situated in crotches, more often on horizontal branches than vertical, and at distances of 0.2 to 1.8 m (0.7 to 6 ft) from the centre of the nest tree. Heights of 76 nests ranged from 0.5 to 3.7 m (1.5 to 12 ft), with 38 averaging 1.1 to 1.5 m (3.5 to 5 ft).

Nest structures (Fig. 162B) were compact cups whose exterior appearance varied from neat to untidy with occasional dangling material noted. In several instances nests were said to resemble those of Yellow Warbler and American Goldfinch. They were variously woven, in order of preference, of grasses, plant down, plant fibres, bark strips, weed stems, rootlets, twigs, pine needles, animal hair, leaves, paper and plastic, and spider webs, and were lined with fine grasses, plant down, weed stems, hair, mosses, and pine needles. Ten nests had outside diameters ranging from 8 to 10 cm (3.1 to 4 inches), inside diameters from 5 to 5.5 cm (2 to 2.2 inches), outside depths from 5.5 to 13 cm (2.2 to 5 inches), and inside depths from 2 to 4 cm (0.8 to 1.6 inches).

EGGS 51 nests with 1 to 4 eggs; 1E (1N), 2E (4N), 3E (18N), 4E (28N).

Average clutch range 4 eggs (28 nests).

Cowbird parasitism 71 nests with 19 parasitized (26.8%).

INCUBATION PERIOD 4 nests: 1 of at least 11 days, 1 of at least 12 days, 2 of ca 13 days.

EGG DATES 50 nests, 13 June to 20 July (63 dates); 25 nests, 21 June to 6 July.

Although no August egg dates were recorded, 1 nest contained 3 young on 20 August, indicating an August egg date.

Breeding Distribution

The Willow Flycatcher (see Fig. 161), distinguished from the Alder Flycatcher primarily on the basis of its song, was given full species status only in 1973 (American Ornithologists' Union 1973). Before that time, nest records of these 2 forms were not reported separately, and thus the former distribution of the Willow Flycatcher is essentially unknown. Snyder (1953) indicated that in the early 1950s it occurred only on Pelee Island, but his information, based on present records, was obviously incomplete. In recent years, the Willow Flycatcher has extended its range northwards, and now it is found throughout most of the south and to Sudbury in the north. It is found most commonly in southern agricultural areas, with the exception of extreme eastern Ontario where its occurrence is infrequently noted and where no nests have been reported. However, in the Ottawa area, there have been a few sightings.

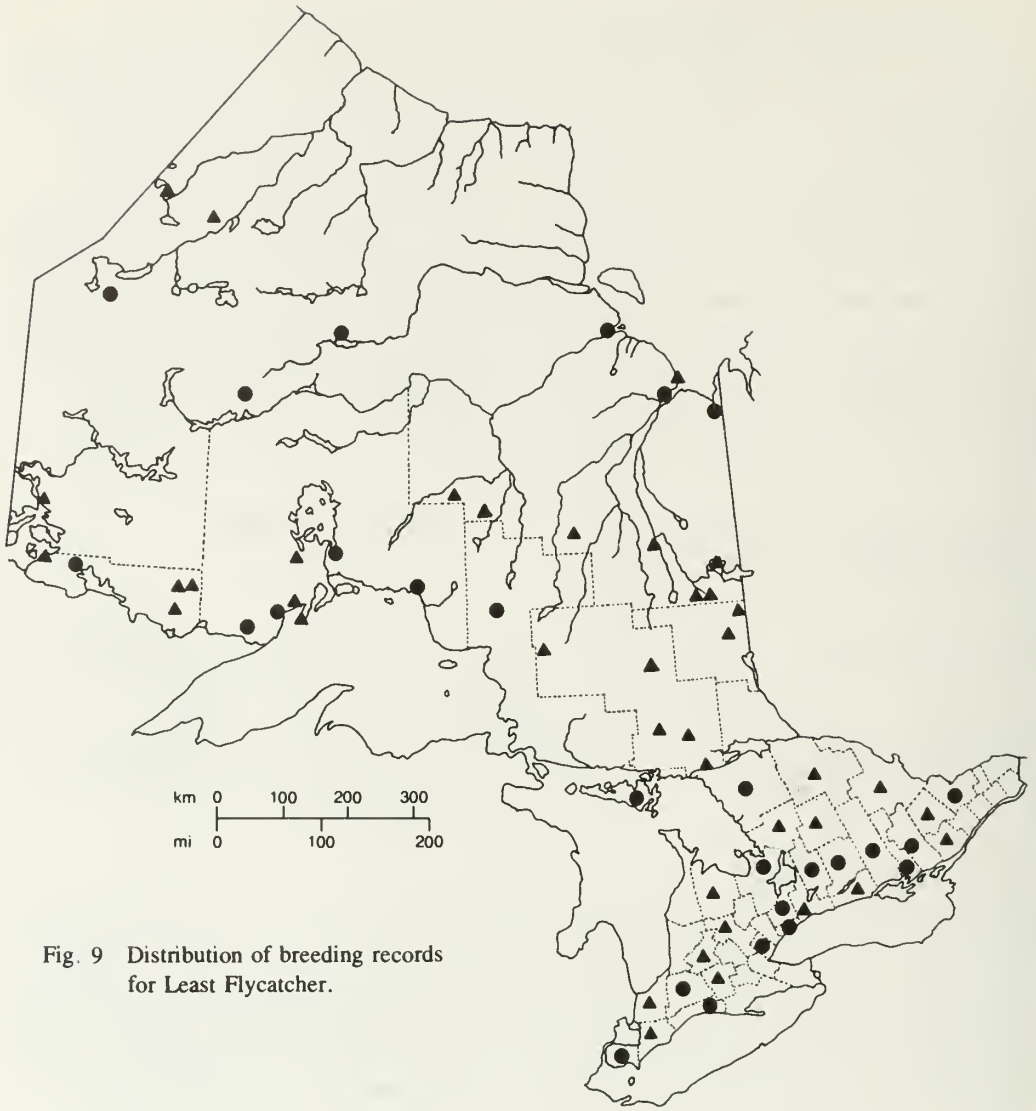


Fig. 9 Distribution of breeding records for Least Flycatcher.

Least Flycatcher, *Empidonax minimus* (Baird & Baird)

Nidiology

RECORDS 201 nests representing 33 provincial regions.

Breeds usually in semi-open, second-growth, and mature deciduous and mixed woods; occasionally in conifer groves, burns, swamp and bog edges, orchards, and shrubby fields; and once in a deciduous grove on a sand dune. Open spaces near the nest, such as forest clearings and edges, water, roads, and cottage clearings, were preferred.

Nests were invariably in trees, with deciduous trees (14 spp., 158 nests) greatly favoured over coniferous (5 spp., 20 nests), and living trees over dead (6 nests) or over living with dead nest branches (3 nests). Small trees or saplings were selected more often than mature trees. The trees chosen most often were birch spp. (67 nests), maple spp. (30 nests), poplar spp. (27 nests), and pine spp. (9 nests). The majority (104 nests) were in crotches or forks, either at the trunk (45 nests) or elsewhere in the tree, with a number (31 nests) situated on horizontal branches and usually supported by small lateral branches. Distances from the trunk of 13 nests ranged from 0.6 to 2 m (2 to 8 ft). Two nests were reported 9 m (30 ft) apart, 2 were 46 m (150 ft) apart, 2 were 61 m (200 ft) apart, and 1 nest was 23 m (75 ft) distant from an active nest of Eastern Wood-Pewee. Heights of 183 nests ranged from 0.6 to 15 m (2 to 49 ft), with 92 averaging 3 to 8 m (10 to 25 ft).

Nest structures were neat, compact cups having relatively thick rims, and, while usually well camouflaged with lichens, were occasionally fairly conspicuous. In some cases they were reported to closely resemble nests of Yellow Warbler and American Redstart. They were woven, in order of preference, of bark strips and fibres, grasses, plant down and wool, plant fibres and stems, spider and caterpillar webs, lichens, horse hair, feathers, twigs and rootlets, mosses, pine needles, thread and string; and leaves and vegetative pieces. Nest linings were of fine grasses, feathers, animal hair, and plant stems. In 2 nests, some of the material used was taken from old nests of this species. Ten nests had outside diameters ranging from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 4.5 to 10 cm (1.8 to 4 inches), and inside depths from 2.5 to 3.5 cm (1 to 1.4 inches).

EGGS 92 nests with 1 to 5 eggs; 1E (4N), 2E (10N), 3E (23N), 4E (54N), 5E (1N).

Average clutch range 4 eggs (54 nests).

Cowbird parasitism 99 nests with 5 parasitized (5%).

INCUBATION PERIOD 3 nests: 2 of at least 13 days, 1 of ca 14 days.

EGG DATES 82 nests, 27 May to 25 July (99 dates); 41 nests, 9 June to 22 June.

Breeding Distribution

The Least Flycatcher (Fig. 158B) breeds across Ontario at least as far north as Big Trout Lake and Fort Albany, and possibly slightly farther.

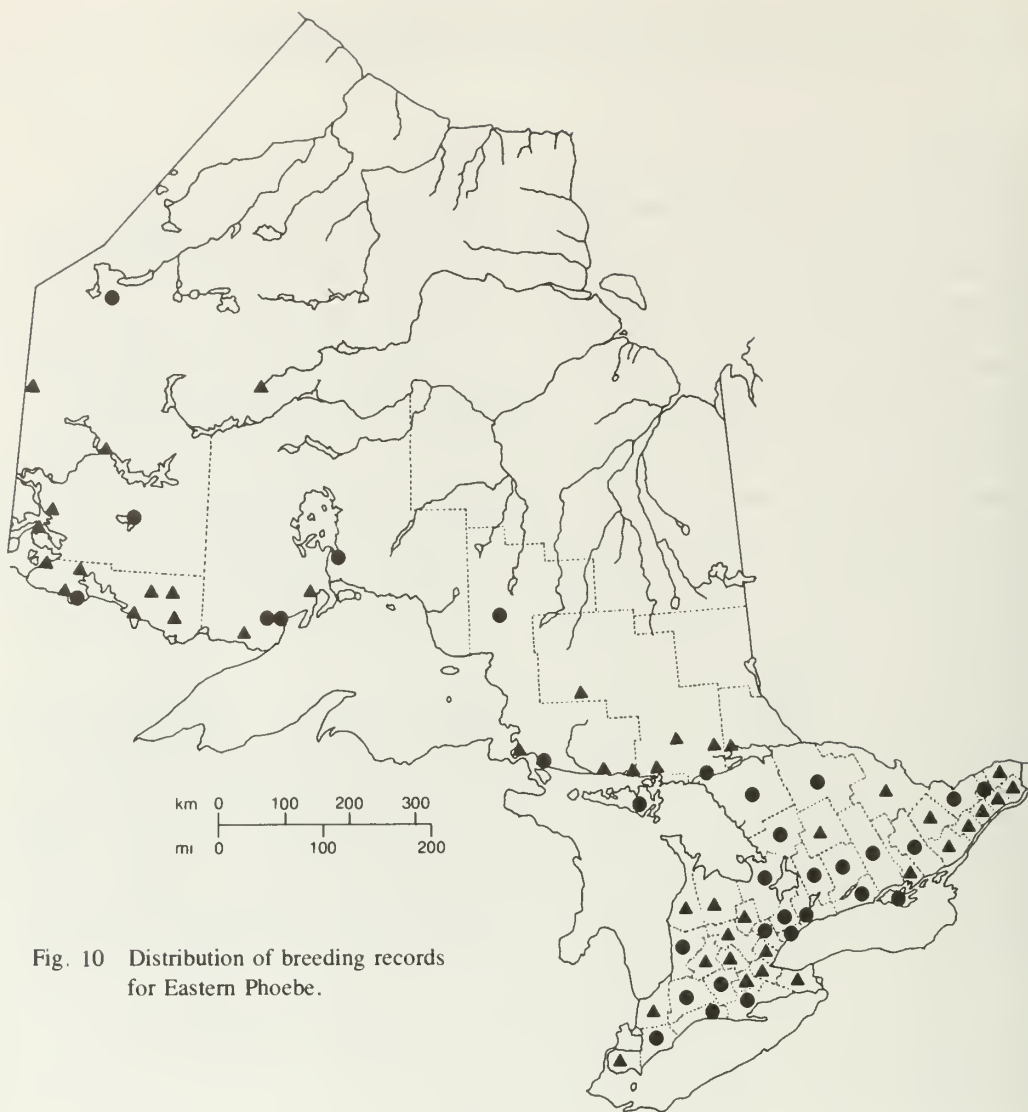


Fig. 10 Distribution of breeding records for Eastern Phoebe.

Eastern Phoebe, *Sayornis phoebe* (Latham)

Nidiology

RECORDS 1710 (ca 1745 nests) representing 50 provincial regions.

Breeds in wooded areas (503 records), including mixed (241 nests), deciduous (138 nests), unspecified (88 nests), and coniferous (23 nests) stands, and swamps (13 nests); in rural and urban populated areas, including farmland, cottage and parkland, gardens, gravel pits, and golf courses (410 records); at river/lake shorelines, road and railway right-of-ways, and dams (63 records); at rock cliffs and rocky outcroppings (37 records) (Fig. 171); in marshes (12 records); and at dunes and beaches (10 records). Usually wooded areas were open or nests

were at their edges. In general, open areas for foraging near the nest were a prerequisite, and highly favoured sites were buildings, bridges, and other manmade structures on which 96% of all nests were located.

Nests were invariably elevated in the following locations: in or on buildings where the sites included ledges, eaves, beams and posts, electrical fixtures and wires, ceilings and roofs, drain-pipes and eavestroughs, and stove-pipes (881 nests); on bridges and culverts (514 nests); on cliffs and in caves (59 nests); under earth-bank overhangs (30 nests); and in tree roots and stubs (4 nests). Unusual nest situations in buildings included a pitchfork handle, a hanging pile of harness, the seat of an upturned canoe, a piece of loose wallpaper, a hanging electric motor, and a metal can. Nests were also reported on a gate, on a partially sunken boat, on a mailbox, on a cattle feeding-trough in a field, in an old well, and in an overturned car. Nest sites and old nests were often reused in successive and/or subsequent years, and periods of as many as 8 consecutive years of use were reported. Sometimes old nests of Barn Swallow (14 records) and American Robin (2 records) were built on, repaired, or otherwise used. Nests were noted near colonial nest sites of both Barn and Cliff swallows and 3 occupied phoebe nests were observed on the same bridge. One nest was reported near an active American Robin nest. Heights of 326 nests on buildings ranged from 0.8 to 9 m (2.5 to 30 ft), with 163 averaging 2.1 to 3 m (7 to 10 ft); heights of 181 nests on bridges and culverts ranged from 0.3 to 9 m (1 to 30 ft), with 91 averaging 1.2 to 2.4 m (4 to 8 ft); heights of 48 nests on rock faces ranged from 0.6 to 7.6 m (2 to 25 ft), with 24 averaging 1.2 to 2.4 m (4 to 8 ft).

Nests were described as bulky cups and, because they were most often placed against a vertical surface, were often incompletely circular with 1 flat side. Some were noted to be flat with shallow cups and a few to be untidy with dangling or spread-out exteriors. Double-tiered nests were reported and a 5-tiered nest (Fig. 190A) resulted from additions in successive years. Probable disorientation caused a female to lay eggs in 3 different nests before deciding on 1 of them. Exteriors were characteristically formed of mosses and mud, and less often of grasses, plant stalks, hair and wool, roots, lichens, feathers, twigs, pine needles, string, plant down, leaves, and cloth. Linings were woven of fine grasses and hair, and less often of plant fibres, mosses, feathers, plant down, pine needles, bark strips, rootlets, lichens, insect and spider silk, string, leaves, and wood chips. Unlined (29) nests were reported, as well as a few nests composed of mud, moss, or grass only. Seventeen nests had outside diameters ranging from 10 to 17 cm (3.9 to 6.7 inches), inside diameters from 5 to 8 cm (2 to 3.1 inches), outside depths from 5 to 28 cm (2 to 11 inches), and inside depths from 2.5 to 6 cm (1 to 2.4 inches). Largest outside depths were from multiple-tiered nests, and side-to-side outer diameters of flat-sided nests were greater than front-to-back diameters.

EGGS 354 nests with 1 to 8 eggs; 1E (2N), 2E (13N), 3E (26N), 4E (124N), 5E (168N), 6E (18N), 7E (2N), 8E (1N).

Average clutch range 4 to 5 eggs (292 nests).

Delays (up to 3 weeks) were often noted between nest completion and the start of laying. Eggs were usually laid at daily intervals, but 2-day intervals were noted at 3 nests between the first and second, second and third, and fourth and fifth eggs. At least 5 of the 2-egg clutches were incubated and produced young. Second and late-season clutches averaged somewhat smaller.

Cowbird parasitism 1349 nests with 162 parasitized (12%).

Eastern Phoebe nests in more exposed locations were the most parasitized.

INCUBATION PERIOD 25 nests, 13 to 18 days, with 13 averaging 14 to 15 days: 2 of 13 days, 3 of 14 days, 2 of ca 14 days, 4 of at least 14 days, 8 of 15 days, 2 of at least 15 days, 3 of 16 days, 1 of 18 days.

Two nests had periods of 21 and 22 days, indicating delays in the onset of incubation. Hatching times of more than 24 hours to at least 3 days at some nests suggested that incubation sometimes commenced before the laying of the last egg.

EGG DATES 365 nests, 6 April to 4 August (518 dates); 182 nests, 23 May to 18 June. The 6 April egg date was for a nest from Ontario County (Durham RM). Renestings were reported; second broods were common and were usually in the same, but sometimes in different, nests. Three triple broods were reported, and these were in different but nearby nests.

Breeding Distribution

The Eastern Phoebe regularly nests throughout southern Ontario and the southern fringes of northern Ontario, but farther north it becomes very thinly scattered and irregular, found in suitable clearings as far as Favourable Lake and Timmins.

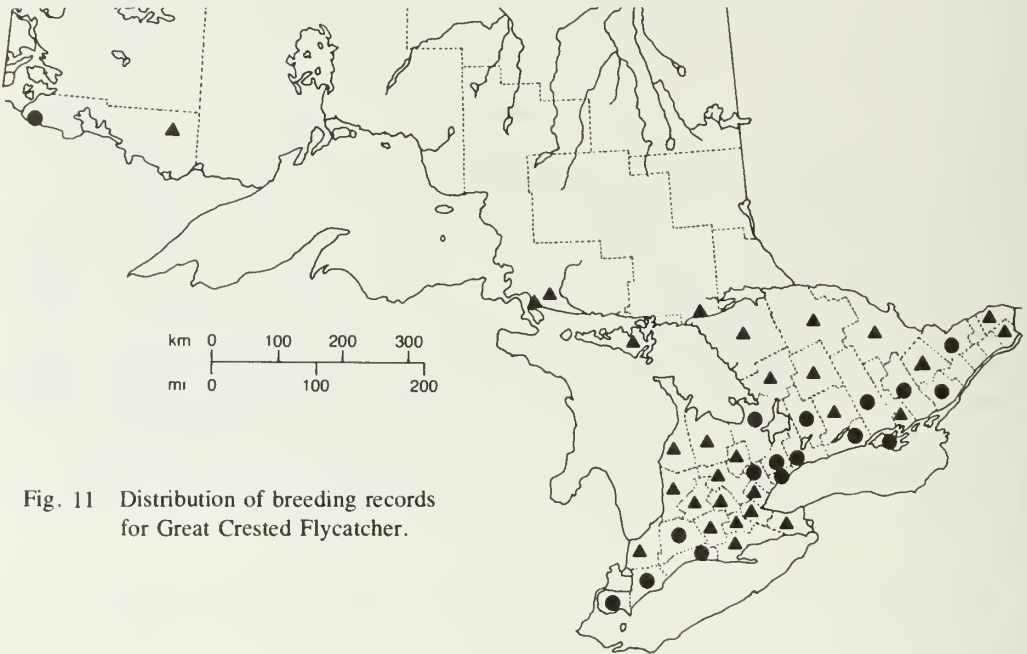


Fig. 11 Distribution of breeding records for Great Crested Flycatcher.

Great Crested Flycatcher, *Myiarchus crinitus* (Linnaeus)

Nidiology

RECORDS 357 nests representing 44 provincial regions. Breeds in a variety of habitats. Those recorded included mixed (23 nests), deciduous (15 nests), coniferous (2 nests), and unspecified (24 nests) woodlands; agricultural land including fields and pastures (40 nests) and orchards (11 nests); wetlands (beaver ponds,

marshes, swamps, and sphagnum bogs) (31 nests); urban and residential areas (gardens, cottage lands, golf courses, and cemeteries) (14 nests); fencerows and roadsides (12 nests); and sand dunes (2 nests). Dry areas were selected more often than wet, and the number of nests in wet areas appeared only to reflect the presence of dead trees used for nesting sites. One swamp nest location was in the middle of a heronry.

Cavity nests of this species were invariably elevated: in both dead and living trees, stubs, and stumps (143 nests); in bird boxes, barrels, and gourds (54 nests); in fence posts and rails (47 nests); and in utility poles (3 nests). Deciduous trees (13 spp., 89 nests) were greatly preferred to coniferous trees (3 spp., 13 nests), and nest cavities were more often in dead or partially dead trees (63 nests) than in living trees (39 nests). Nests were in both natural cavities and those formed by woodpeckers (e.g., Northern Flicker and Pileated Woodpecker), with the former predominating. The DBH of 1 nest tree was 20.3 cm (8 inches). Competition for nest cavities was reported with House Wren, Eastern Bluebird, and European Starling, as well as with red squirrel. One nest was noted close to an active nest of Yellow-bellied Sapsucker. Two nests in boxes were reused by this species for a second consecutive year, as was another nest in a natural cavity in an apple tree. Heights of 181 nests (excluding those in nest boxes) ranged from 0.6 to 18.3 m (2 to 60 ft), with 91 averaging 1.5 to 4.6 m (5 to 15 ft).

Some nests were described as cups, and outer walls were composed of grasses, feathers, plant stalks, leaves, twigs, wood, string and cord, paper, mosses, and wood chips. Linings were often characterized by the presence of snakeskins and/or plastic and cellophane, and other materials reported were animal hair (a squirrel tail was in 1 nest), bark strips, pine needles, feathers, rootlets, fine grasses, plant down, and cloth. Diameters of 7 cavity openings ranged from 5 to 18 cm (2 to 7 inches); depths of 16 cavities ranged from 15 to 61 cm (6 to 24 inches), with 8 averaging 30.5 to 38 cm (12 to 15 inches); widths of 2 cavities were both 12.7 cm (5 inches).

EGGS 156 nests with 1 to 6 eggs; **1E** (3N), **2E** (7N), **3E** (13N), **4E** (42N), **5E** (55N), **6E** (36N).

Average clutch range 4 to 6 eggs (133 nests).

One set of 6 eggs of this species had been built over, and a set of 5 eggs had been laid and was being incubated.

Cowbird parasitism 218 nests with 6 parasitized (2.8%).

INCUBATION PERIOD 9 nests: 1 of no more than 12 days, 1 of at least 12 days, 2 of 13 days, 1 of at least 13 days, 2 of no more than 14 days, 2 of 14 days (young left these latter 2 nests also in 14 days).

Eggs were laid at daily intervals and incubation commenced with the last egg laid.

EGG DATES 155 nests, 23 May to 10 July (183 dates); 77 nests, 9 June to 20 June.

Breeding Distribution

Found throughout southern Ontario, the Great Crested Flycatcher ranges into the north only a short distance. It is seldom reported north of Kenora and Thunder Bay in the west, or Sault Ste Marie and Sudbury in the east.

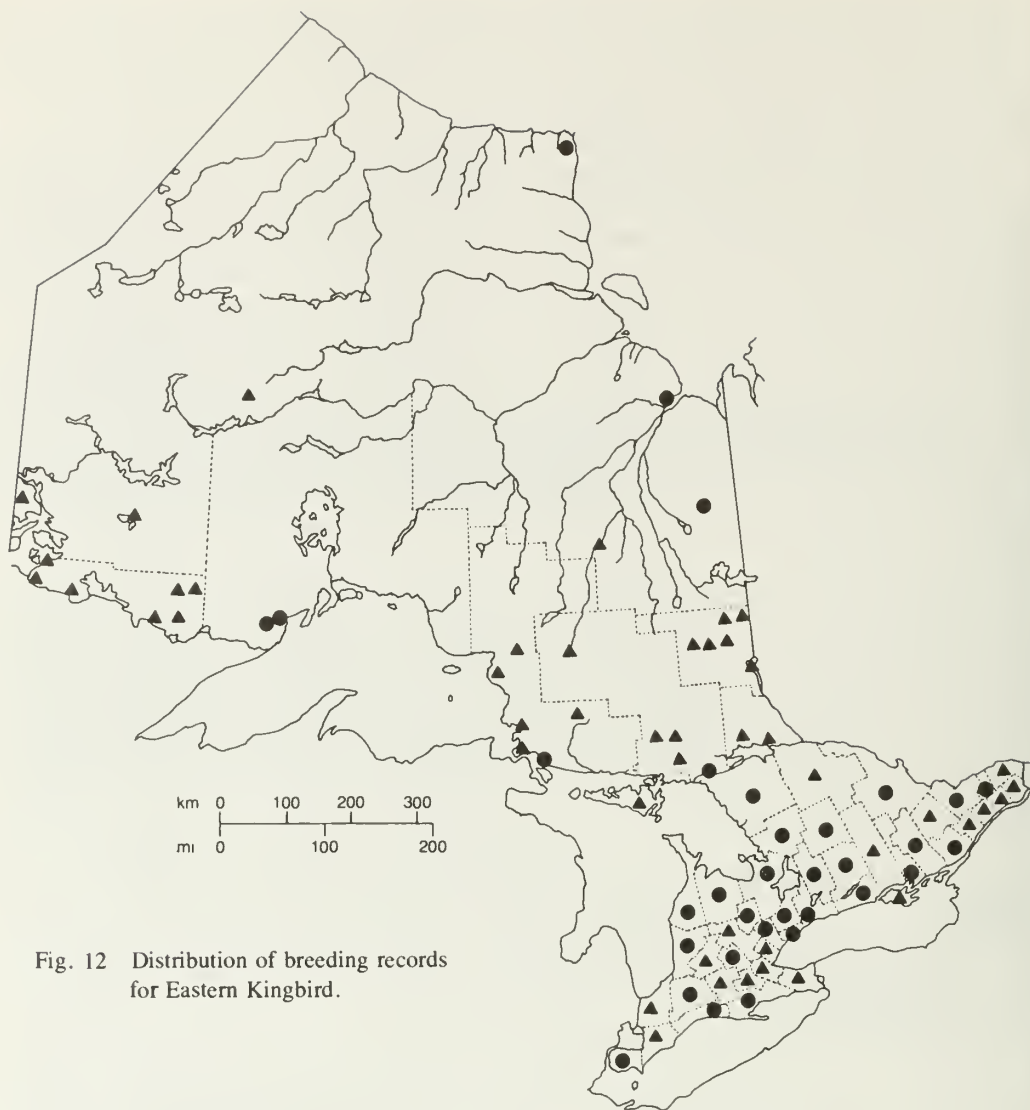


Fig. 12 Distribution of breeding records for Eastern Kingbird.

Eastern Kingbird, *Tyrannus tyrannus* (Linnaeus)

Nidiology

RECORDS 1350 (1353 nests) representing all 52 provincial regions.

Characteristically an inhabitant of open country, the Eastern Kingbird breeds in a variety of habitats: in rural areas in shrubby fields and pastures, orchards, fencerows, and golf courses (395 nests); in beaver ponds, bogs, and marshes, and on shorelines (233 nests); in woodlands, especially at their edges (87 nests); on treed sand dunes (76 nests); in residential, cottage, and parkland areas (54 nests); and in a tundra area (1 nest). Dry habitats (650 nests) were preferred to wet habitats (225 nests), but because open areas near the nest were a prerequisite,

371 nests were recorded over water in both wet and essentially dry habitats.

Nests were variously positioned in trees, shrubs, and vines (558 nests); on standing stumps (35 nests); on fallen tree trunks and branches (6 nests); in roots of upturned stumps (1 floating) (6 nests); and in a rotted-out woodpecker cavity (1 nest). Living trees and shrubs (802 nests) were much preferred to dead (149 nests). Manmade sites included 2 nests on hydro towers, and 1 each on the end of a small crane, on top of a steel culvert, on the sill of a waterfowl enclosure, on a beam of a hydro transformer, on telephone-pole insulators, on a support beam of a Bailey bridge, on a pole on a ski hill, and on a fence post. Tree and shrub nests were most often on horizontal branches (237 nests), with a few on upslanting or almost vertical limbs. Nests were often in crotches or forks and were sometimes against the trunk, but more often away from it. Distances of 29 nests from the trunk ranged from 0.6 to 4.6 m (2 to 15 ft), with 15 averaging 1.2 to 2.4 m (4 to 8 ft). Deciduous trees, shrubs, and vines (32 spp., 707 nests) were greatly favoured over coniferous trees (6 spp., 166 nests), with hawthorn spp. (200 nests), apple (170 nests), poplar spp. (67 nests), white cedar (62 nests), pine spp. (58 nests), elm spp. (48 nests), and oak spp. (43 nests) used most often. One red maple nest tree had a DBH of 35.6 cm (14 inches). Nest sites were sometimes reoccupied (21 nests), and the same nest was repaired and reused, once for 4 consecutive years, once for 3 years, and at least twice for 2 years. Four nests were noted in 1 tree, and twice, 2 fresh nests were reported in the same tree. One of the latter involved 2 active nests 0.9 m (3 ft) apart on the same branch. Nests have been reported in the same trees as active nests of Cedar Waxwing (3), American Robin (2), Common Grackle (2), Brown Thrasher (1), and Northern Oriole (1). Heights of 330 nests ranged from 0.3 to 21.3 m (1 to 70 ft), with 165 averaging 1.8 to 4.3 m (6 to 14 ft).

Most nests were described as cups and often as bulky, untidy, and woven. Nests have been built on the species' old nests and on old nests of American Robin and Cedar Waxwing. Material from a previous year's nest has been reused.

Nest materials, in order of preference, were grasses and plant stalks, sticks and twigs, plant down, rootlets, feathers, string, leaves, animal hair, bark, mosses and lichens, paper, rags and stuffing, mud, seeds, conifer needles, and tent caterpillar cocoons. Linings were of fine grasses, plant down, animal hair, rootlets, conifer needles, plant stalks and fibres, feathers, artificial stuffing, bark and small twigs, seeds, leaves, string, and spider web. One nest was made almost entirely of sheep's wool. Ten nests had outside diameters ranging from 12 to 15 cm (4.7 to 6 inches), inside diameters from 6.5 to 7.5 cm (2.6 to 3 inches), outside depths from 6.5 to 13 cm (2.6 to 5 inches), and inside depths from 4 to 5.5 cm (1.6 to 2.2 inches).

EGGS 381 nests with 1 to 6 eggs; **1E** (14N), **2E** (50N), **3E** (179N), **4E** (128N), **5E** (8N), **6E** (2N).

Average clutch range 3 to 4 eggs (307 nests).

Renestings or replacement nests were reported 6 times, and 1 pair rebuilt twice (i.e., 3 nests). Usually 1 egg was laid each day. One new nest remained empty for 3 weeks before eggs were laid.

Cowbird parasitism 989 nests with 12 parasitized (1.2%).

The Eastern Kingbird is a known rejecter species (Rothstein, 1975).

INCUBATION PERIOD 49 nests, 12 to 18 days; 25 nests, 13 to 15 days.

The 18-day period undoubtedly indicated a delay in the onset of incubation.

EGG DATES 367 nests, 16 May to 5 August (495 dates); 183 nests, 13 June to 28 June.

Breeding Distribution

The Eastern Kingbird breeds regularly throughout southern Ontario and as far north as Kenora and Cochrane. At least occasionally it nests at scattered localities where suitable habitat is available as far north as Hudson Bay, as is evidenced by numbers of summer sightings and a few nest records.

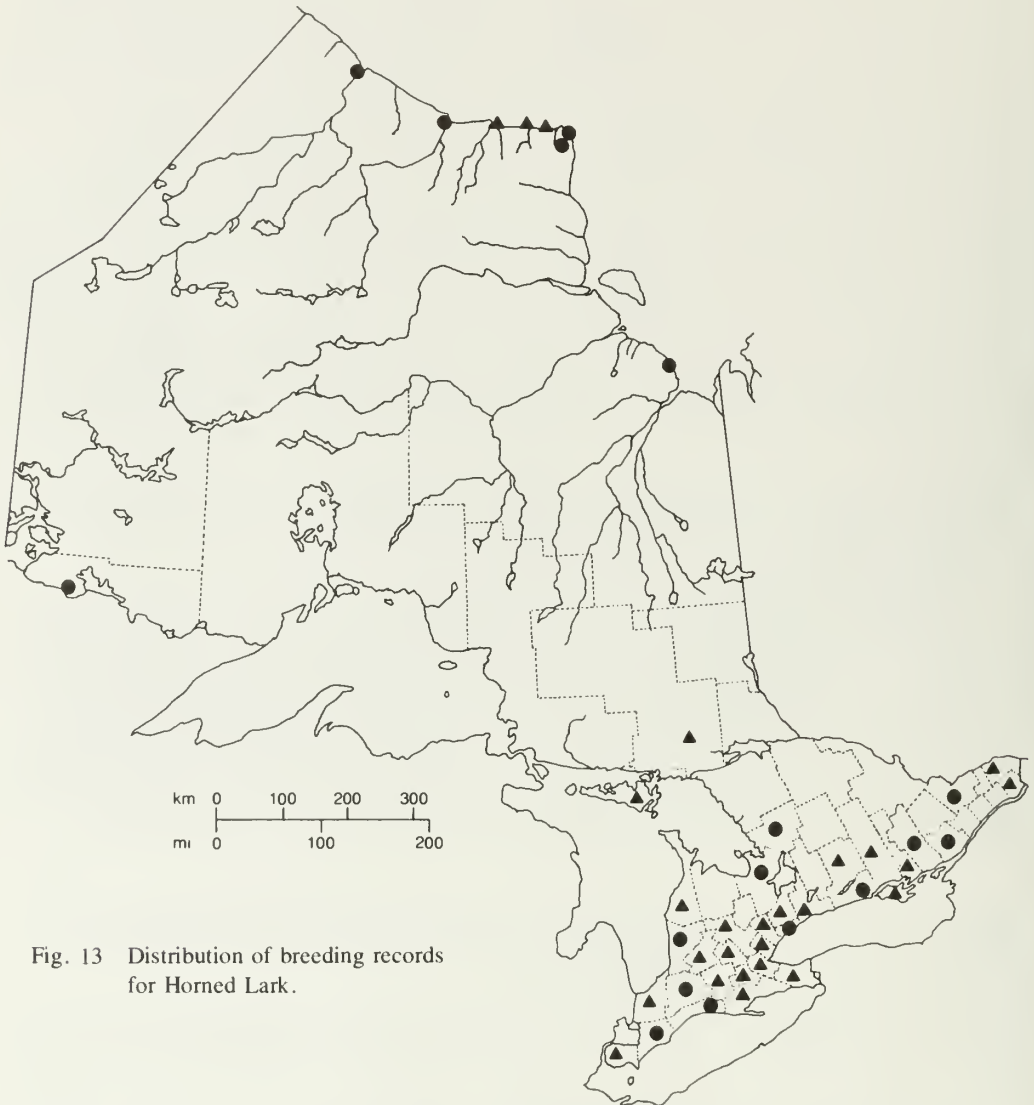


Fig. 13 Distribution of breeding records for Horned Lark.

Horned Lark, *Eremophila alpestris* (Linnaeus)

Nidiology

RECORDS 162 (164 nests) representing 33 provincial regions.

A bird of open country, the Horned Lark breeds in relatively treeless areas, in such diverse locations as fields, pastures, and prairies (64 nests); on large lawns, airfields, race-tracks, and golf courses (20 nests); in gravel pits and on landfill areas (9 nests); on road shoulders, railroad beds, and parking-lot edges (8 nests); on sand beaches (3 nests); and on tundra (3 nests; Fig. 143). The choice of a number of breeding locations indicated a seeming indifference to traffic and other nearby human activity.

Nests were invariably on the ground in bare, sparsely vegetated stubble, or short-grass areas. Nests were on well-drained, flat surfaces or on slight elevations or slopes, and were placed in depressions which were usually excavated by the adult. However, one nest was noted in a depression at least partly made by a horse's hoof, and another was in the centre of a cow chip. Although most nests were not concealed, one was reported hidden at the base of a tuft of grass, and another had a clump of dead grass hanging loosely over it. A number of nests (16) were placed beside individual plants, grass clumps, shrubs, a boulder, driftwood, the remains of a machinist's cap, and a clod of earth. An unusual nest site was between the ends of two railroad ties and was passed over by a train at least twice in each 24 hours. One nest was near a previous year's nest.

Nests were described as cups, usually deep but occasionally shallow, and with their rims flush with the ground surface. Some nest structures were noted to be large and heavily built, and some had pieces of earth and small stones positioned beside the nest as a "paving". Nest exteriors were composed almost invariably of dead grasses, and, to a lesser extent, of plant stalks and fibres, rootlets and bark fibres, wool and cotton waste, and sticks. Linings were of fine grasses, plant down, feathers, animal hair, plant fibres, fine rootlets, leaf pieces, and string. Five nests had outside diameters ranging from 9 to 11 cm (3.5 to 4.3 inches), inside diameters from 5 to 6 cm (2 to 2.4 inches), outside depths from 4 to 4.5 cm (1.6 to 1.8 inches), and inside depths from 2.5 to 3.5 cm (1 to 1.4 inches).

EGGS 153 nests with 1 to 6 eggs; 1E (2N), 2E (19N), 3E (62N), 4E (61N), 5E (8N), 6E (1N).

Average clutch range 3 to 4 eggs (123 nests).

Renesting, after an unsuccessful initial attempt, was reported. Eggs were laid at daily intervals, and hatching was completed in 24 hours.

Cowbird parasitism 161 nests with 4 parasitized (2.5%).

Early egg dates in this species may in part explain the low incidence of parasitism.

INCUBATION PERIOD 5 nests: 1 of at least 10 days, 1 of ca 11 days, 1 of 12 days, 1 of at least 13 days, 1 of more than 13 days.

EGG DATES 134 nests, 23 March to 20 July (157 dates); 67 nests, 15 April to 24 May. The protracted period of egg dates suggests the possibility of second broods, although none were reported.

Breeding Distribution

The Horned Lark breeds throughout southern Ontario, although it is largely absent from the forested Shield. Its range extends into the north as far as southern Algoma and Sudbury districts, where forests have been cleared. It is also found in western Rainy River District, and along the coasts of Hudson and James bays. It is essentially absent from the whole of the Boreal and Hudson Bay Lowland forest regions, with the possible exception of the cleared areas in the Clay Belt where there have been summer sightings (Smith, 1957).

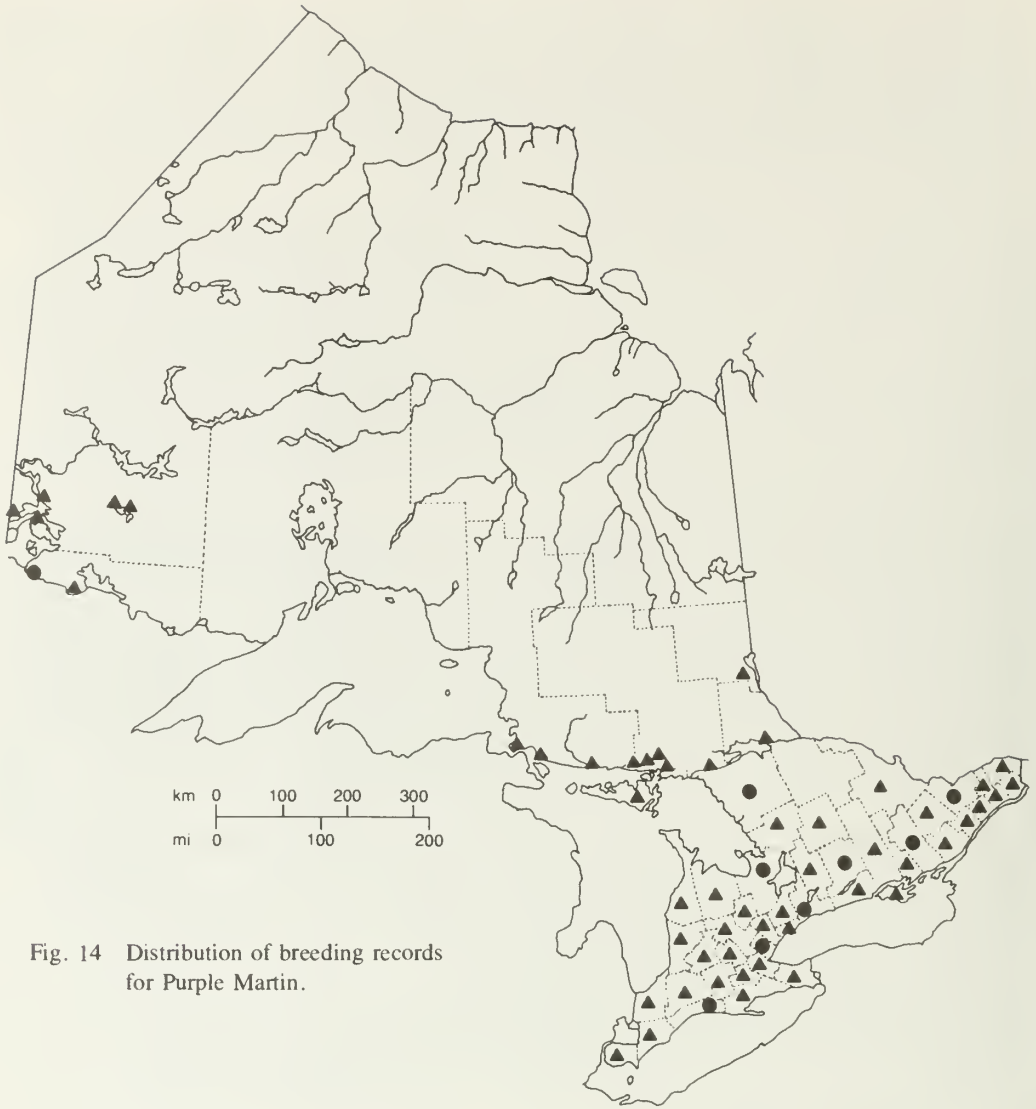


Fig. 14 Distribution of breeding records for Purple Martin.

Purple Martin, *Progne subis* (Linnaeus)

Nidiology

RECORDS 773 (612 colonies, 47 single nestings, ca 5100 nests) representing 50 provincial regions.

Breeds mainly in colonies of 2 to 40 pairs. The average size of 314 estimated colonies, totalling 2578 nests, was 8 nests. Most colonies were considered to be the aggregations of birds at each multiple-unit martin house, and the number of units influenced colony size, especially if a house was completely full. There were 47 records of single nestings.

Breeding habitats were urban gardens and commercial areas, parkland, and cottage areas

(106 records); rocky shorelines and islands (25 records); wooded areas and clearings (13 records); treed sand-dune/marsh areas (13 records); farmland, including pastures (11 records); and limestone cliffs (1 record). Many colonies were at water's edge and most were within a relatively short distance of permanent water. Habitats were listed as described, but categories often overlapped.

Nests were invariably elevated, usually in manmade multiple-unit bird boxes and less often in single-unit bird boxes. Other manmade nest sites were in holes in walls, roofs, and eaves of buildings, and behind awnings (19 records); in town towers at a height of 15 m (50 ft) and church belfreys at 7.6 m (25 ft) (5 records); behind metal sheeting on buildings (2 records); inside a building under a ledge at 7.6 m (25 ft) (1 record); in the bottom of a tire on a post at 1.7 m (5.5 ft) (1 record); in a hole in a fence post at 1.2 m (4 ft) (1 record); in an electric-light standard (1 record); in pipe holes of a wrecked boat's engine boiler, just above the waterline (1 record); and in various parts of a half-sunken dredge (1 record). There were 2 records in natural sites: 1 was a colony occupying holes in a limestone cliff at 30 m (100 ft), and the other was a single nest in a tree cavity at 4.6 m (15 ft). Colonies in different martin houses were sometimes close together in the same garden or other area. Tree Swallows (1 record), European Starlings (3 records), and House Sparrows (11 records) were each reported sharing martin houses that were simultaneously occupied by martins. At 1 colony house, martins, starlings, and sparrows were nesting together at the same time. Heights of nests in martin houses ranged from 2.1 to 12 m (7 to 40 ft).

Nests (Fig. 192A) were described as scanty structures with shallow bowls, often having an anterior rim or ridge built-up of mud and/or grass. Nests were composed of mud, grasses and straw, leaves (usually green), sticks and twigs, and plant stalks. Linings were characteristically formed of green leaves (poplar spp. usually, and once willow sp.) and feathers. Three nests were made of grass only, and 2 were entirely of mud and green poplar leaves. Nest materials tended to fill the occupied space, and thus, nest measurements varied in relation to the size of the compartment or recess.

EGGS 230 nests, with 1 to 7 eggs; 1E (7N), 2E (11N), 3E (17N), 4E (60N), 5E (88N), 6E (45N), 7E (2N).

Average clutch range 4 to 5 eggs (148 nests).

Eggs were usually laid daily, but at 1 nest 2 days elapsed between the laying of 2 of the eggs.

INCUBATION PERIOD 16 nests, 14 to 17 days: 2 of 14 days, 1 of at least 14 days, 2 of 15 days, 5 of ca 15 days, 1 of at least 15 days, 1 of 16 days, 2 of ca 16 days, 1 of at least 16 days, 1 of 17 days.

EGG DATES 232 nests, 21 May to 7 August (347 dates); 116 nests, 20 June to 30 June.

A pair feeding young on 18 May indicated an earlier egg date than any reported. Occasional renestings occurred, but no double broods were reported.

Breeding Distribution

The Purple Martin breeds across Ontario as far north as Kenora, Thunder Bay, and southern Timiskaming District, apparently always near human habitation.

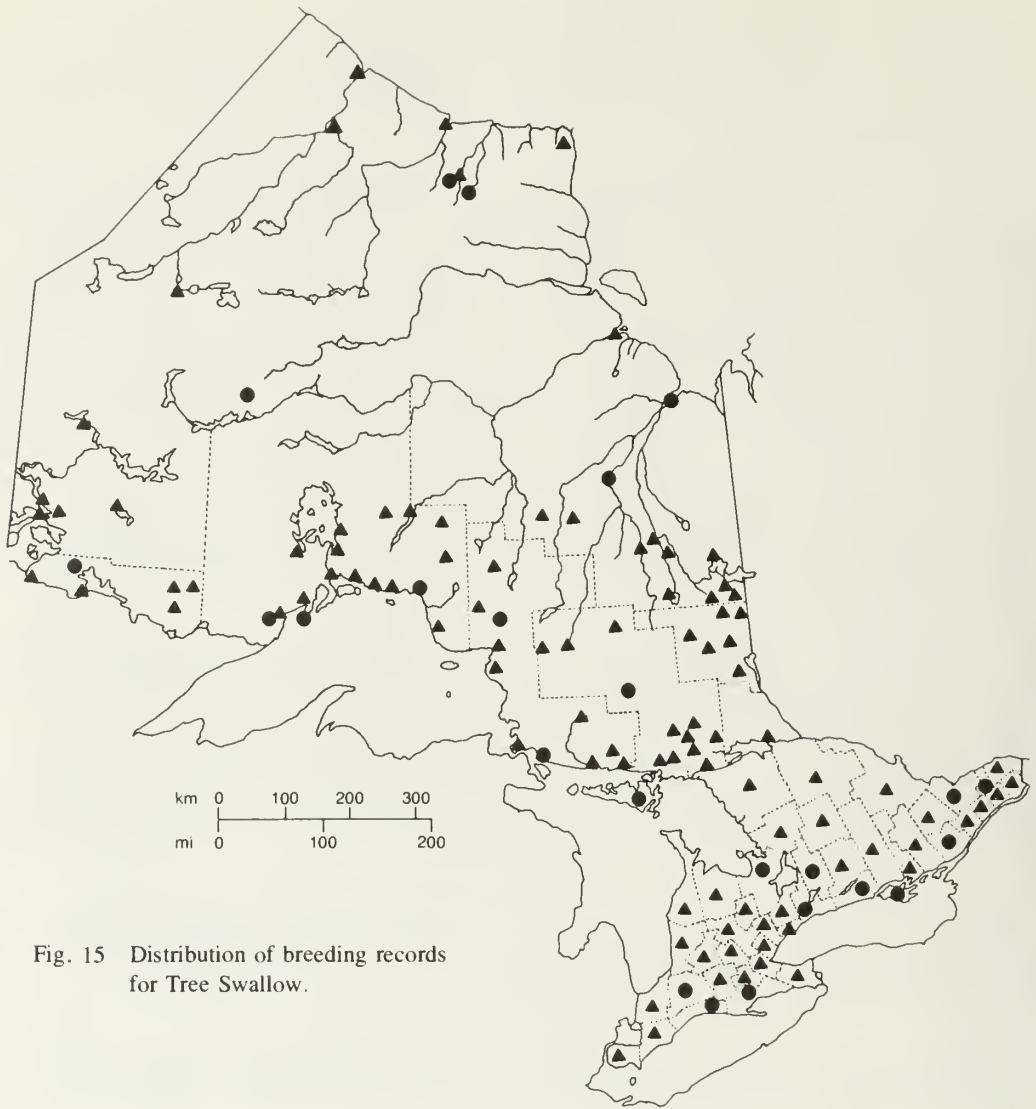


Fig. 15 Distribution of breeding records for Tree Swallow.

Tree Swallow, *Tachycineta bicolor* (Vieillot)

Nidiology

RECORDS 5450 (ca 5744 nests) representing all 52 provincial regions.

Breeds singly and occasionally in small colonies, in wooded areas, including swamps, and burns (257 records); in wetland areas, including marshes (cattail/sedge/buttonbush), bogs, and wet meadows (47 nests); on roadsides, and river/pond shorelines (43 nests); on sand dunes and beaches (31 nests); in farmland areas, including pastures and fields (24 nests); in rural and urban populated areas, including gardens, cottage areas, lumber mills, streets, golf courses, and canals (18 nests); and on rocky islands and cliffs (16 nests). Nest-box locations were a major influence on breeding-habitat selection, since 84.6% of reported nests were in boxes.

Wherever specified, dry and wet wooded areas were usually open and consisted of deciduous (62 records), mixed (55 records), and coniferous (30 records) stands. Habitats were slightly more often dry than wet, and the many wet-area nests seemed to mainly indicate the presence of dead trees for nest sites together with open space for foraging. Although habitats were listed as described, categories often overlapped.

Based on 3643 records, nests were elevated in bird boxes (3081 nests—84.6%); cavities in trees, stubs, and roots (399 nests); cavities or hollows in fence and other posts, utility poles, and pipes (117 nests); recesses and holes in buildings and boats (20 nests); unspecified locations (13 nests); recesses and ledges of limestone cliffs (2 nests); mail boxes (2 nests); and recesses in street lights (2 nests). Single nests were reported in a howitzer barrel, a newspaper cylinder, a sandbank hole, a car tire, an unused pump, a flower pot, and a hole in a concrete wall. Bird boxes included bluebird, duck, and multiple-unit martin boxes. When nesting in martin houses (34 records), several pairs of Tree Swallows often nested together and once were reported to share a house with Purple Martins. Nest trees were usually dead and occasionally living (5 records); nests were in both natural and old woodpecker cavities (32 records). One nest was in a cavity in a floating stump and another in a floating tree trunk. Deciduous trees (8 spp., 127 nests) were chosen over coniferous (4 spp., 31 nests), and those most frequently selected were birch spp. (48 nests), elm spp. (25 nests), poplar spp. (23 nests), willow spp. (17 nests), and pine spp. (13 nests). Nest cavities were sometimes reused in successive years. Nests were reported in the same trees or multiple-unit boxes as active nests of Northern Flicker, Eastern Kingbird, Purple Martin, Black-capped Chickadee, and European Starling. Nest sites were contested with House Wrens, Eastern Bluebirds, European Starlings, and House Sparrows. Two Tree Swallow pairs simultaneously occupied nests in the same post. Heights of 398 nests, excluding nest boxes, ranged from 0.2 to 23 m (0.5 to 75 ft), with 199 averaging 1.5 to 6 m (5 to 20 ft).

Nest shapes were influenced by cavity shapes and sizes. They were generally described as shallow cups characteristically woven of feathers (usually white) and grasses to which were sometimes added twigs, plant stalks, pine needles, bark, rootlets, fern fronds, leaves, plant down, hair, and paper. Linings, if differentiated, were of feathers, grasses, and plant down. Feathers were often added as egg laying progressed. Eight nests were of feathers only, 2 nest cavities contained no material, and 1 nest contained no feathers. One hundred and three nests in boxes had outside diameters ranging from 10 to 12.7 cm (4 to 5 inches), inside diameters from 2 to 8 cm (0.8 to 3.1 inches), outside depths from 1 to 10 cm (0.4 to 4 inches), and inside depths from 0.5 to 6 cm (0.2 to 2.4 inches). Depths of 28 natural cavities ranged from 5 to 91.5 cm (2 to 36 inches), with 14 averaging 30.5 to 50.8 cm (12 to 20 inches). Hole diameters of 17 natural cavities ranged from 3.8 to 25.4 cm (1.5 to 10 inches), with 9 averaging 5 to 15 cm (2 to 6 inches).

EGGS 385 nests with 1 to 12 eggs; 1E (7N), 2E (13N), 3E (24N), 4E (65N), 5E (112N), 6E (123N), 7E (30N), 8E (7N), 9E (2N), 10E (1N), 12E (1N).

Average clutch range 5 to 6 eggs (235 nests).

Both a 9-egg and a 10-egg clutch were known to be the product of 2 females. Eggs were usually laid at daily intervals; however, in 5 nests 2-day intervals were noted between 2 of the eggs, a 7-day interval occurred between the first and fourth eggs at a sixth nest, and 9 days were taken to lay 5 eggs in a seventh nest. At least 5 of the 2-egg clutches were incubated and produced young. Second and late-season clutches averaged smaller.

Cowbird parasitism 4149 nests with 1 parasitized (0.02%).

INCUBATION PERIOD 99 nests, 10 to 17 days, with 50 averaging 13 to 14 days: 1 of no more

than 10 days, 2 of 11 days, 9 of 12 days, 23 of 13 days, 1 of no more than 13 days, 4 of at least 13 days, 36 of 14 days, 3 of at least 14 days, 11 of 15 days, 1 of at least 15 days, 6 of 16 days, 1 of ca 16 days, 1 of 17 days.

A reported 7-day period indicated an early onset of incubation, which was also indicated by several hatching times of 2 days. Delays in the onset of incubation were noted for 10 nests (periods were 18 to 25 days).

EGG DATES 385 nests, 25 April to 7 August (612 dates); 192 nests, 29 May to 9 June. Renestings and second broods were both reported.

Breeding Distribution

The Tree Swallow breeds throughout Ontario.

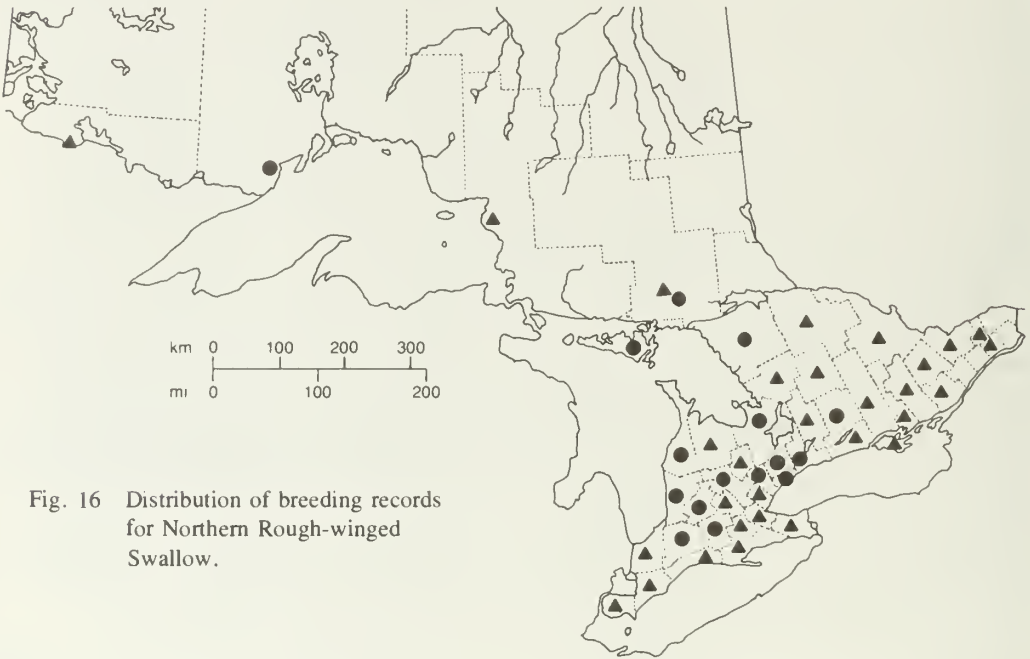


Fig. 16 Distribution of breeding records for Northern Rough-winged Swallow.

Northern Rough-winged Swallow, *Stelgidopteryx serripennis* (Audubon)

Nidiology

RECORDS 410 (285 isolated nestings, 56 colonies, ca 524 nests) representing 42 provincial regions.

Breeds singly and in small colonies (194 nests) of 2 to 25 pairs. Colonial nests comprised 37% of the nest total, and the number of nests per colony averaged 4.

Breeding habitats were farmland, including fields and pastures (79 records); creek/river courses and flood plains (65 records); wooded areas (58 records); rocky bluffs and cliffs (20 records); gravel pits, quarries, and rock road cuts (19 records); urban and rural manmade sites, including city bridges, planing mills, and canals/dykes (9 records); islands (3 records); urban parks (2 records); and sand dunes (2 records). Habitats were listed as described, but categories often overlapped.

Nests were variously positioned in tunnels in sand or clay banks of rivers, creeks, and roads (150 records; Fig. 173); in drainage holes in concrete bridges and culverts (104 records); in tunnels and crevices in gravel pits and quarries (21 records); in crevices in rock and shale cliffs, and rock road cuts (17 records); in drainage and ventilation pipes (8 records); in tunnels in sawdust piles and sand dunes (4 records); in holes in trees (2 nests); in a hole in a concrete wall (1 nest); in a crevice in a stone wall (1 nest); in a hole in a boathouse wall (1 nest); and on a ledge beneath a concrete bridge (1 nest). One of the tree holes was an old woodpecker cavity and the other was a natural cavity. One of the cliff nests was in a cave with a 0.6 by 1.1 m (2 by 3.5 ft) entrance. There were 19 records of this species nesting in Bank Swallow colonies, and nesting sites were also shared with Belted Kingfishers. Although the species excavated its own burrows at times, it frequently used existing burrows (11 reports of old kingfisher burrows). One nest under a bridge was in the broken nest of a Cliff Swallow. Heights of 214 nests, measured from the nest entrance to the surface of the land or water below the entrance, ranged from 0.2 to 18 m (0.5 to 60 ft), with 107 averaging 0.9 to 2.4 m (3 to 8 ft).

Nests (Fig. 174B) were loosely built, flat, bulky cups with shallow bowls. The amount of nesting material varied in relation to the size of the nest cavity and sometimes covered the cavity floor out to the entrance. Nests were characteristically formed of grass stems, sometimes homogeneously (24 nests), but often in combination with leaves and leaf pieces (usually green leaves of willow and poplar spp.), twigs, plant stalks and fibres, mud, rootlets, feathers (4 nests only), dung, pine needles, bark strips, hair, and string. Linings, when differentiated, were of fine grasses and green leaves. Lengths of 50 nest tunnels ranged from 0.2 to 0.9 m (0.5 to 3 ft), with 25 averaging 0.3 to 0.6 m (1 to 2 ft). Tunnel entrances tended to be oval rather than round, with heights greater than widths. Ten entrances had horizontal diameters ranging from 5 to 10 cm (2 to 4 inches) and vertical diameters from 7.6 to 12.7 cm (3 to 5 inches).

EGGS 146 nests with 1 to 8 eggs; 1E (11N), 2E (13N), 3E (11N), 4E (30N), 5E (34N), 6E (30N), 7E (15N), 8E (2N).

Average clutch range 4 to 6 eggs (94 nests).

INCUBATION PERIOD 2 nests: 1 of 15 days, 1 of ca 15 days.

EGG DATES 135 nests, 4 May to 22 July (138 dates); 67 nests, 3 June to 20 June. Renestings were reported in the same cavity and in different cavities.

Breeding Distribution

The Northern Rough-winged Swallow (Fig. 174A) breeds throughout southern Ontario, but in the north it has been found at only a few localities relatively close to the Great Lakes and in western Rainy River District.

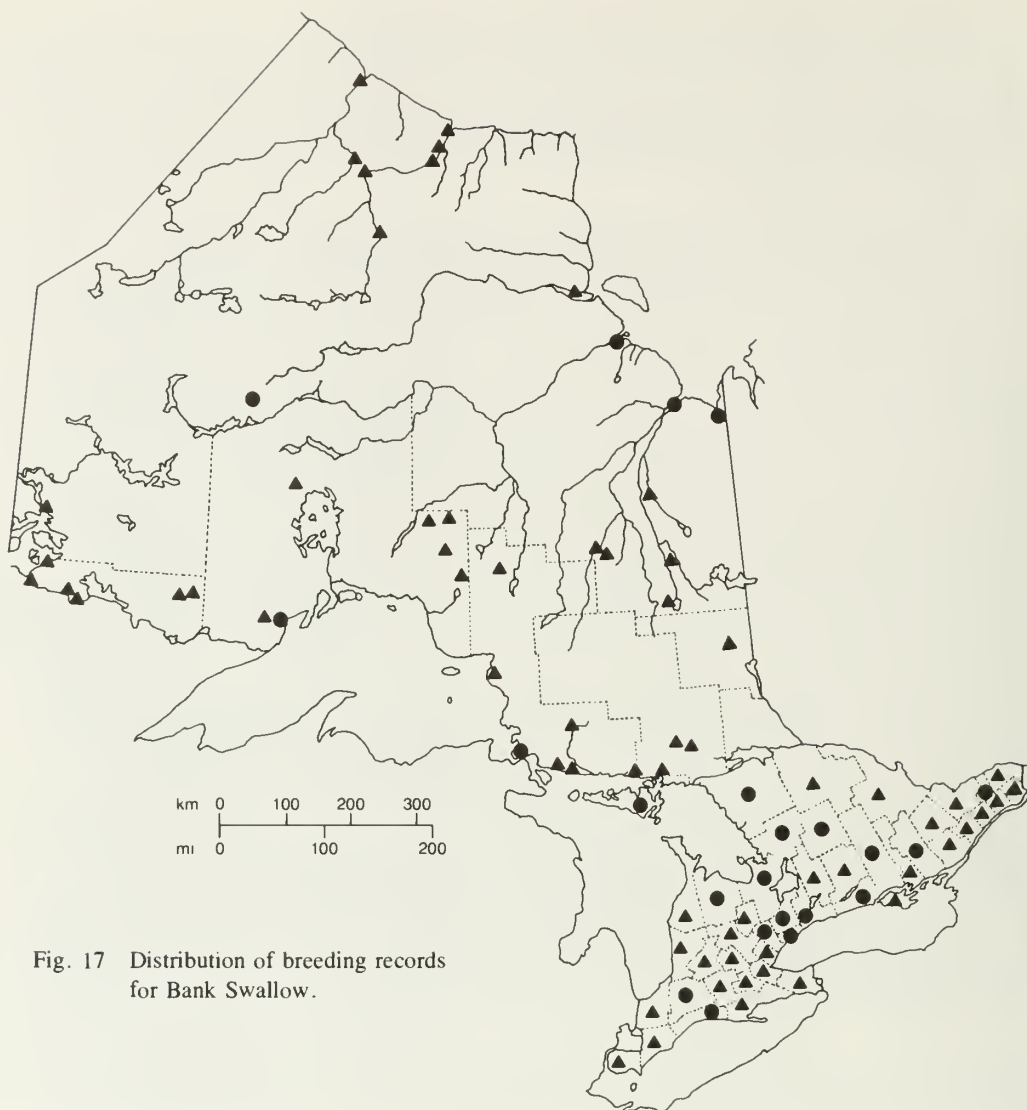


Fig. 17 Distribution of breeding records for Bank Swallow.

Bank Swallow, *Riparia riparia* (Linnaeus)

Nidiology

RECORDS 1397 (106 colonies, 46 isolated nestings, ca 5020 nests) representing all 52 provincial regions.

Breeds in colonies (4434 nests) of 2 to 1500 pairs and occasionally singly (45 records). The average size of 99 estimated colonies totalling 4434 nests was 45 nests.

Breeding habitats and sites were roadside banks (126 records); banks of rivers/creeks/lakes/lagoons (120 records; Fig. 173); farmland, including pastures and fields (104 records); wooded areas (75 records); dunes, bluffs, and eskers (41 records); earth/sand/gravel cuts, pits, and piles (20 records); rural and suburban sawmills and parking lots (11 records); small islands (8 records); and marsh and swamp edges (4 records). Habitats

were listed as described, but categories often overlapped.

Nests were almost invariably in tunnels: in banks of sand/clay/earth (430 records); in pits of gravel/sand/earth (266 records); in sand dunes (9 records); and in manmade piles of gravel, sand, and sawdust (5 records). Three nests were reported in plastic tubes inserted in banks. The tunnels were excavated by the birds themselves, and most were nearer to the top of the bank or other location, than to the bottom. Distances below the top of 31 nests ranged from 0.2 to 3 m (0.8 to 10 ft), with 15 averaging 0.6 to 0.9 m (2 to 3 ft). Colony sites and tunnels were often reused, but not always in consecutive years. Other species nesting in tunnels or cavities near or in Bank Swallow colonies included Belted Kingfisher, Northern Rough-winged Swallow, and European Starling. Nest heights were considered to be the distance of land or water below tunnel entrances, and heights of 735 nests ranged from 0.6 to 45.7 m (2 to 150 ft), with 367 averaging 2 to 4.6 m (6.5 to 15 ft).

Nests were scanty, flat platforms located at the rear of the tunnels in depressions. They were usually composed of grass stalks and straws, and less often included twigs, plant stalks, leaves, and rootlets. Linings were characteristically formed of white feathers (pheasant feathers in 1 nest), which increased in number as the eggs were laid, and occasionally also included fine grasses and grape-vine bark strips. The outside diameter of 1 nest was 12.5 cm (5 inches). Lengths of 297 tunnels ranged from 0.2 to 1.5 m (0.7 to 5 ft), with 148 averaging 0.5 to 0.6 m (1.5 to 2 ft). For 2 tunnels, horizontal diameters were both 6 cm (2.4 inches) and vertical diameters were both 5 cm (2 inches). Tunnel entrances tended to be horizontal ovals or were round. For 10 entrances, vertical diameters ranged from 2.5 to 5 cm (1 to 2 inches) and horizontal diameters from 5 to 6.4 cm (2 to 2.5 inches).

EGGS 261 nests with 1 to 9 eggs; 1E (8N), 2E (14N), 3E (22N), 4E (72N), 5E (110N), 6E (29N), 7E (5N), 9E (1N).

Average clutch range 4 to 5 eggs (182 nests).

The 9-egg clutch may have been the product of 2 females. After 15 June (possible renestings) 4-egg clutches were more common than 5-egg clutches. Clutch sizes of this species averaged smaller than those of Northern Rough-winged Swallow, and when equal numbers of clutches were compared the numbers of 6- and 7-egg clutches of the Bank Swallow were noticeably fewer.

INCUBATION PERIOD 12 nests, 13 to 16 days: 3 of 13 days, 1 of 14 days, 1 of ca 14 days, 2 of at least 14 days, 2 of 15 days, 2 of ca 15 days, 1 of 16 days.

Incubation often commenced before the last egg was laid, and hatching periods of 2 or more days were reported. The shortest incubation periods (13 and 14 days) were probably the result of an early onset of incubation and did not represent the actual period. In 1 burrow a second female started laying in a nest that already contained 6 partially incubated eggs.

EGG DATES 259 nests, 4 May to 17 July (292 dates); 130 nests, 2 June to 15 June.

Renestings were reported in the same burrow. A clutch was laid in a burrow from which young had recently fledged, but since second broods have not been proven to occur (Petersen, 1955), this laying may have been from another pair.

Breeding Distribution

The Bank Swallow breeds throughout Ontario, although it is sparsely distributed on the Canadian Shield and in Hudson Bay Lowland regions.

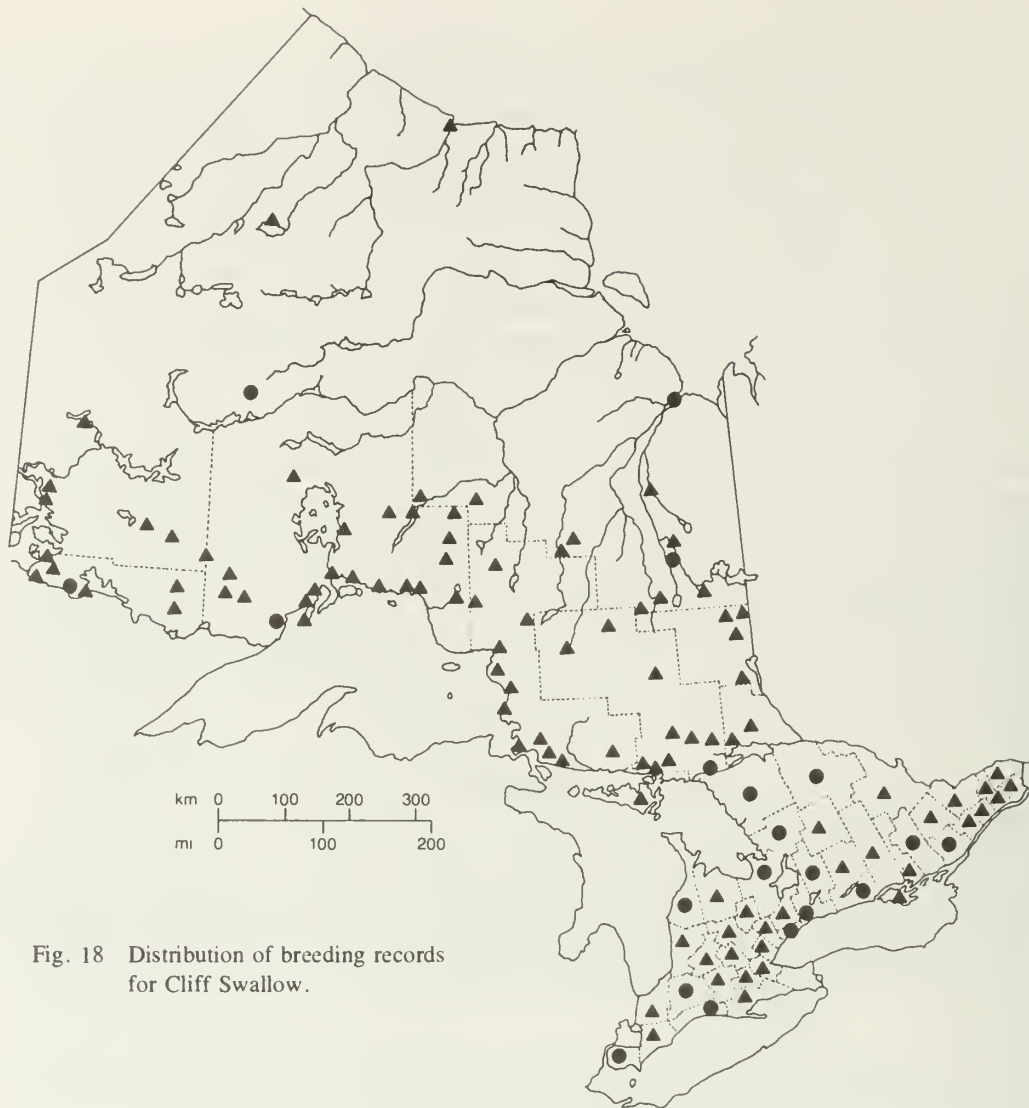


Fig. 18 Distribution of breeding records for Cliff Swallow.

Cliff Swallow, *Hirundo pyrrhonota* Vieillot

Nidiology

RECORDS 838 (363 colonies, 87 single nestings, ca 5800 nests) representing 51 provincial regions.

Breeds in colonies (5422 nests) of 2 to 250 pairs. The average size of 359 estimated colonies totalling 5422 nests was 15 nests. There were 87 records listing 1 nest each, at least some of which were isolated or solitary nestings.

Breeding habitats were rural and urban residential and industrial areas (169 records); farmland, including pastureland (129 records); shorelines and edges of rivers, lakes, and marshes (119 records); clearings in wooded areas (52 records); cottage areas, parklands, mines, and hatcheries (35 records); roadsides (27 records); cliffs (5 records); and sand-dune areas (2 records). Habitats were listed as described, but categories often overlapped.

Nests (Fig. 189) were located on or in buildings (406 records); under bridges (138 records); on rock cliffs (5 records); in a road culvert (1 record); and on the wall of a dam (1 record). Buildings of all types were used for nest sites and, in order of preference, included barns, houses and cottages, stores/hotels and other commercial buildings, sheds, schools, boat houses, churches, airport hangars, lighthouses, grain elevators, train stations and firehalls, pavilions, post offices, and mobile homes. Most exterior nest locations on buildings were under the eaves (340 records) with the nest usually placed against both the vertical surface and the eave overhang. Fewer nests were on vertical side walls, under roof peaks, on light fixtures, under veranda roofs, and under balconies and window ledges. There were a few reports of nests inside buildings (15 records), on beams and rafters, walls, and ceilings. Nests under bridges were on girders and abutment walls. Cliff nests were on vertical surfaces and beneath overhangs. Colony sites were often reused in consecutive years, and old nests were often repaired and reused. One pair used a previous year's nest after an Eastern Bluebird had raised a brood in it. Colony sites, especially those under bridges, were sometimes shared with Barn Swallows. House Sparrows sometimes took over Cliff Swallow nests in active colonies. Southerly nest exposures (21 of 45 records) were more frequently reported than any other direction. Spaces between the nests in a colony varied, but many were side by side and touching each other. Heights of 520 nests on buildings, bridges, and dams ranged from 0.9 to 30 m (3 to 98 ft), with 260 averaging 3 to 6 m (10 to 20 ft). Heights of 7 nests on cliffs and in quarries ranged from 3 to 9 m (10 to 30 ft).

Nests were jug- or gourd-shaped structures with exteriors entirely composed of many mud pellets. If located at the junction of a vertical surface with a horizontal, overhanging surface, the rear and part of the dome of the nest were formed by those surfaces. In some nests completion of the dome and formation of the tubular or spoutlike entrance often took place during egg laying and incubation. Some nests had downward-sloping spouts. Other nests had no spouts and only partial domes or none at all. Occasionally nests of Barn Swallows were domed over and used by Cliff Swallows. Nests were lined with grasses and straws, rootlets, pine needles, twigs, plant down, and fishing lines. The innermost lining often contained some feathers. Five nest spouts were 5 cm (2 inches) in length, and the entrance diameters of 5 nests ranged from 3.8 to 17.8 cm (1.5 to 7 inches). Five nests had outside diameters ranging from 12.7 to 19 cm (5 to 7.5 inches), inside diameters (front to back) from 9.5 to 16 cm (3.7 to 6.3 inches), and outside depths from 9.2 to 17.8 cm (3.6 to 7 inches).

EGGS 128 nests with 1 to 7 eggs; 1E (10N), 2E (14N), 3E (27N), 4E (55N), 5E (20N), 7E (2N).

Average clutch range 3 to 4 eggs (82 nests).

In 1 of the 7-egg clutches, 4 eggs were partially incubated and the other 3 were addled, which may have indicated 2 separate layings. In 1 nest, 2 birds were sitting simultaneously on single eggs. At least 3 of the 2-egg clutches produced young.

INCUBATION PERIOD 5 nests: 1 of 12 to 14 days, 1 of 13 to 15 days, 1 of ca 16 days, 1 of at least 17 days, 1 of at least 20 days.

The 17- and 20-day periods probably represent a delay in the onset of incubation. Because incubation commenced before laying was completed, incubation lengths varied, and hatching usually took ca 2 days.

EGG DATES 128 nests, 22 May to 2 August (147 dates); 64 nests, 5 June to 27 June.

Drying out and subsequent falling of the mud nests was relatively common and, if it occurred during the egg stage, often resulted in renesting. Double broods were also reported.

Breeding Distribution

The Cliff Swallow nests throughout Ontario but, like the Barn Swallow, prefers manmade structures for nesting and is largely absent from forested and muskeg-covered areas.

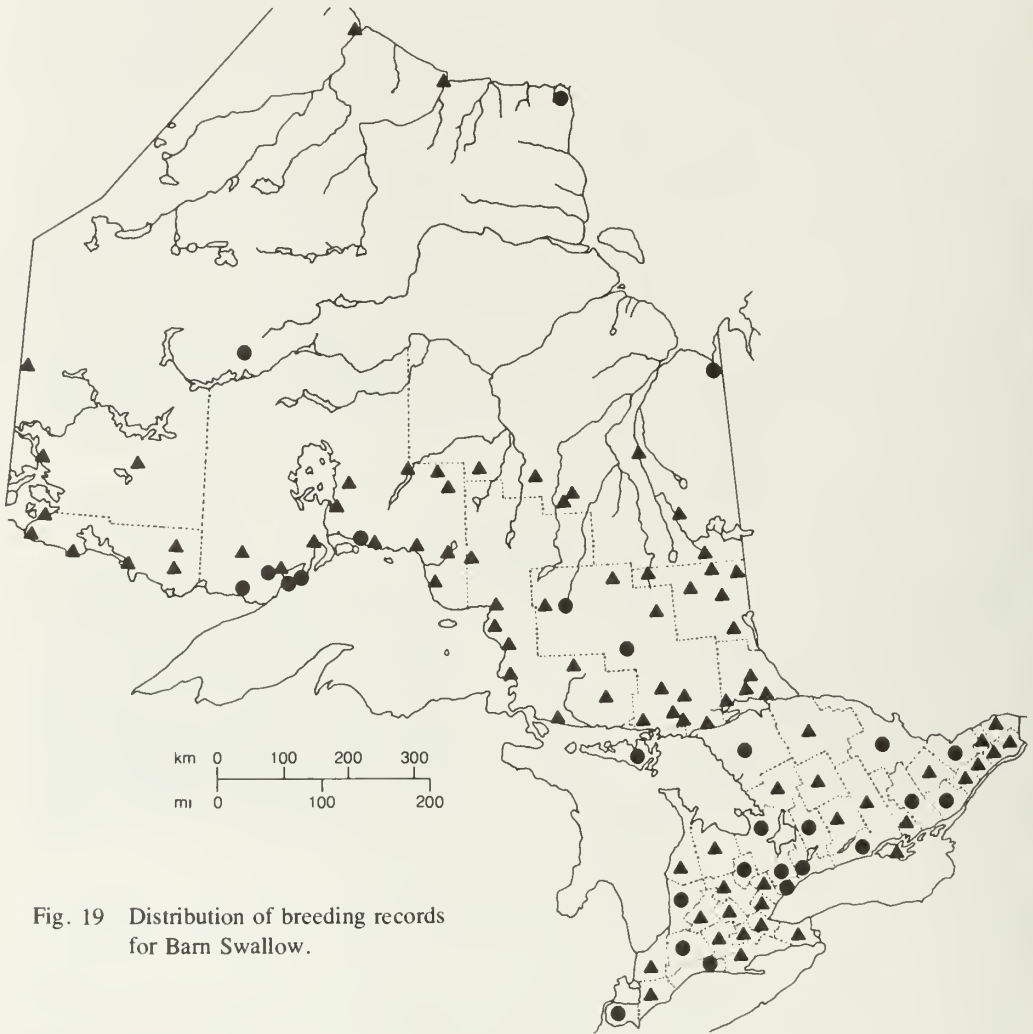


Fig. 19 Distribution of breeding records for Barn Swallow.

Barn Swallow, *Hirundo rustica* Linnaeus

Nidiology

RECORDS 3814 (ca 4279 nests) representing all 52 provincial regions.

Breeds singly and in small colonies of 2 to 59 nests. The average size of 161 estimated colonies in all habitats was 10 nests.

Breeding habitats were in farmland, including fields, pastures, crop-fields, and conifer plantations (146 records); at lake/river shorelines and road right-of-ways (124 records); in wooded clearings, including cottage areas and parkland (104 records); in urban populated areas, including residential and commercial land (70 records); on rocky cliffs (Fig. 171) and

islands (64 records); in wetlands, including marshes, bogs, meadows, and flood plains (16 records); in sand-dune areas (15 records); and on subarctic tundra (13 records). Breeding habitats in wet areas appeared only to indicate the preference for open space for foraging. The presence of buildings, bridges, and other manmade structures used for 88.2% of nest sites was the primary influence on breeding-habitat selection. Although habitats were listed as described, categories often overlapped.

Nests were elevated in a great variety of sites in the following locations: inside or outside buildings, on beams and posts, under eaves, awnings, and roof peaks, on walls, on verandahs, on light fixtures and wires, over windows and doors, and on pipes and ventilators (462 records); under bridges and in road culverts (96 records); on rock faces and in caves (79 records); on dredgers and trucks (5 records); on concrete walls (2 records); and on a tree limb (1 record). Unusual nest sites included hanging pieces of paper and cloth, a gear wheel, a pulley, a leaning plank, and a sunflower seed-head tacked to a barn beam. Ten nests in road culverts ranged from 3 to 9 m (9 to 30 ft) in height. The single tree nest was on a limb at a major fork of a white birch. Nests were most often attached by mud to vertical surfaces and were placed close to overhead horizontal surfaces. Many nests gained additional support by resting on ledges or various projections. Nest sites were often reused and old nests were sometimes built on or repaired in second or later nestings and in successive or subsequent years. One nest was used for 5 consecutive years. Barn Swallows sometimes used old nests of Eastern Phoebe (5 records) and American Robin (3 records). Two active nests were touching each other; 2 others on the same beam were only 20 cm (8 inches) apart; and 2 other nests, 45.7 cm (18 inches) apart, were both built by a single pair, and the female laid in each. Nests were sometimes near active Eastern Phoebe nests, and 2 were at distances of 0.6 and 0.9 m (2 and 3 ft). Heights above land or water of 556 nests in all locations ranged from 0.3 to 10.7 m (1 to 35 ft), with 278 averaging 2 to 3 m (6.5 to 10 ft). Three exceptionally high nests on a bridge, a tower platform, and a rocky cliff were at heights of 15.2, 25.9, and 45.7 m (50, 85, and 150 ft), respectively.

Nests were usually formed of adhered mud pellets and, because they were often fixed to a vertical surface, they were relatively flat on 1 side, semicircular in shape, and with side-to-side diameters greater than front-to-back. The interior bowl or cup was usually circular and relatively shallow in depth. A few nests were described as primitive with incomplete bottoms and a few as untidy. Nests with 2 to 4 tiers were noted and resulted from new nests being built on top of old ones; 1 such built-up nest had an outside depth of 38.1 cm (15 inches). Almost all nest exteriors were formed of mud pellets to which grasses and straw, plant stalks, twigs, mosses, leaves, bark pieces, manure, and string were sometimes added. Linings were characteristically of feathers (usually white), and less often of grasses, conifer needles, mosses, hair, lichens, and string. Three nests in a rocky cave in Thunder Bay District contained no mud. Another nest was reported to be formed of mud only. Eighteen nests had outside diameters ranging from 10 to 18 cm (4 to 7.1 inches), inside diameters from 6 to 12 cm (2.4 to 4.8 inches), outside depths from 4 to 14 cm (1.6 to 5.5 inches), and inside depths from 2 to 5.6 cm (0.8 to 2.2 inches).

EGGS 467 nests with 1 to 7 eggs; 1E (4N), 2E (13N), 3E (47N), 4E (156N), 5E (201N), 6E (44N), 7E (2N).

Average clutch range 4 to 5 eggs (357 nests).

Although eggs were usually laid daily, a number of intervals from 2 to 6 days were reported between eggs in some clutches. At least 5 of the 2-egg clutches were incubated and produced young. Second and late-season clutches averaged smaller.

Cowbird parasitism 3205 nests with 4 parasitized (0.1%).

INCUBATION PERIOD 82 nests, 9 to 17 days, with 41 averaging 13 to 14 days: 1 of 9 days, 1 of 10 days, 5 of 11 days, 5 of 12 days, 32 of 13 days, 22 of 14 days, 11 of 15 days, 1 of 16 days, 2 of at least 16 days, 1 of 17 days, 1 of at least 17 days.

Hatching times at some nests of 24 to 48 hours, together with the shortest recorded incubation periods (9 and 10 days), suggest at least some early onsets of incubation. The longest periods indicate a delay in the onset of incubation or long intervals between egg layings.

EGG DATES 461 nests, 10 May to 21 August (689 dates); 231 nests, 7 June to 24 June. The 10 May date was from a nest in Victoria County, and the 21 August date from a nest in Thunder Bay District. Renestings both once and twice were reported. Second broods were common and usually, but not always, occurred in the same nest. Some second broods were produced in new nests built on top of first nests.

Breeding Distribution

The Barn Swallow nests throughout Ontario, although it is largely absent from forested and muskeg-covered regions.

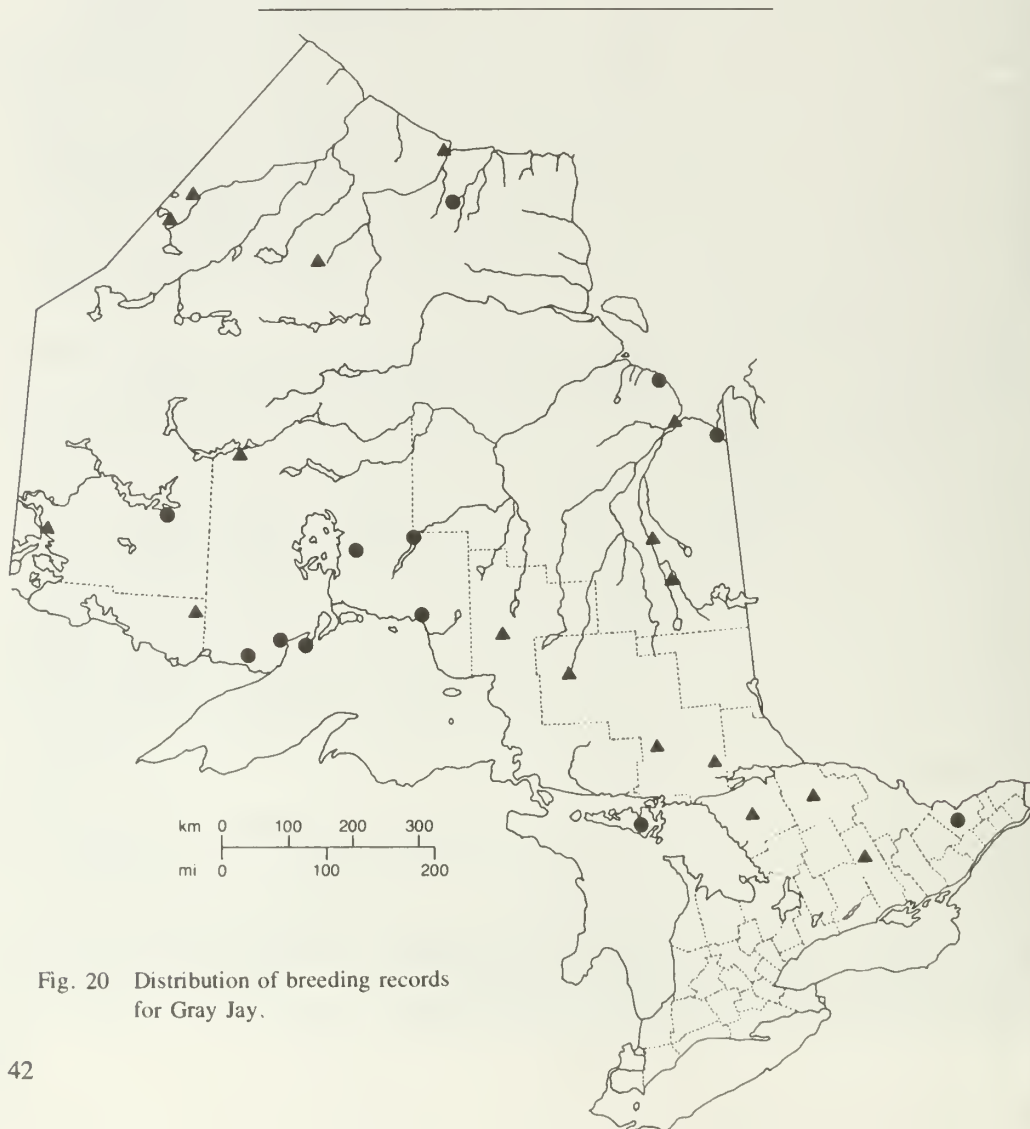


Fig. 20 Distribution of breeding records for Gray Jay.

Gray Jay, *Perisoreus canadensis* (Linnaeus)

Nidiology

RECORDS 69 nests representing 7 provincial regions.

Breeds usually in either coniferous (26 nests; Fig. 153) or mixed (25 nests) woods, and less often in mainly deciduous woods (4 nests). Although nests near water and in spruce bogs were commonly reported, nests in relatively dry areas were almost equally common, and favourite nest-tree species appeared to be the dominant influence in breeding-habitat selection. Open areas (forest edges, water, clearings, bogs, beaver meadows and marshes, roads) were favoured over dense, closed woodland areas.

Nests were invariably in living coniferous trees of 4 species: black spruce (31 nests), white spruce (16 nests), balsam fir (16 nests), and hemlock (1 nest). Trees were both small and large, and 1 spruce had a DBH of 15 cm (6 inches). Most nests were against the trunk in crotches of lateral branches (42 nests), but sometimes nests were positioned away from the trunk, usually on horizontal branches (12 nests) at distances ranging from 1 to 4.6 m (3 to 15 ft). One nest was built between two parallel trunks 15 cm (6 inches) apart. Heights of 66 nests ranged from 1.2 to 15 m (4 to 50 ft), with 33 averaging 2.4 to 6.1 m (8 to 20 ft).

Nests (Fig. 154A) were well-concealed, bulky structures, composed of coniferous and occasionally of deciduous twigs on the exterior, into which were securely woven caterpillar and spider cocoons, bark, plant stalks, leaves, lichens, plant down, string and twine, pine needles, and once, a wasp nest. Linings, typically, were of bark strips (cedar and birch) and feathers (Ruffed Grouse, Spruce Grouse, Saw-whet Owl, and their own), and less often of hair, plant fibres and grass, paper, cotton, and leaves. Eight nests had outside diameters ranging from 18 to 25 cm (7 to 10 inches), inside diameters from 7 to 10 cm (2.8 to 4 inches), outside depths from 9 to 16.5 cm (3.5 to 6.5 inches), and inside depths from 4 to 9 cm (1.6 to 3.5 inches).

EGGS 47 nests with 1 to 5 eggs; 1E (1N), 2E (2N), 3E (33N), 4E (9N), 5E (2N).

Average clutch range 3 eggs (33 nests).

Renestings were noted on 6 occasions when the first nests had been unsuccessful due to extreme weather conditions or predation.

INCUBATION PERIOD 10 nests, 18 to 20 days: 1 of at least 18 days, 1 of ca 18 days, 1 of 18 days, 4 of 19 days, 3 of 20 days.

This species lays an egg each day and sits from the first egg, but since the young were reported to hatch within a 24-hour period, true incubation may not commence with the first egg. The above incubation periods were ascertained by considering that incubation commenced with the penultimate egg.

EGG DATES 29 nests, 7 March to 1 May (45 dates); 15 nests, 29 March to 8 April.

Breeding Distribution

Breeding throughout forested portions of northern Ontario, the Gray Jay is also found where coniferous forests are present as far south as the northern parts of Peterborough County and Ottawa-Carleton RM.

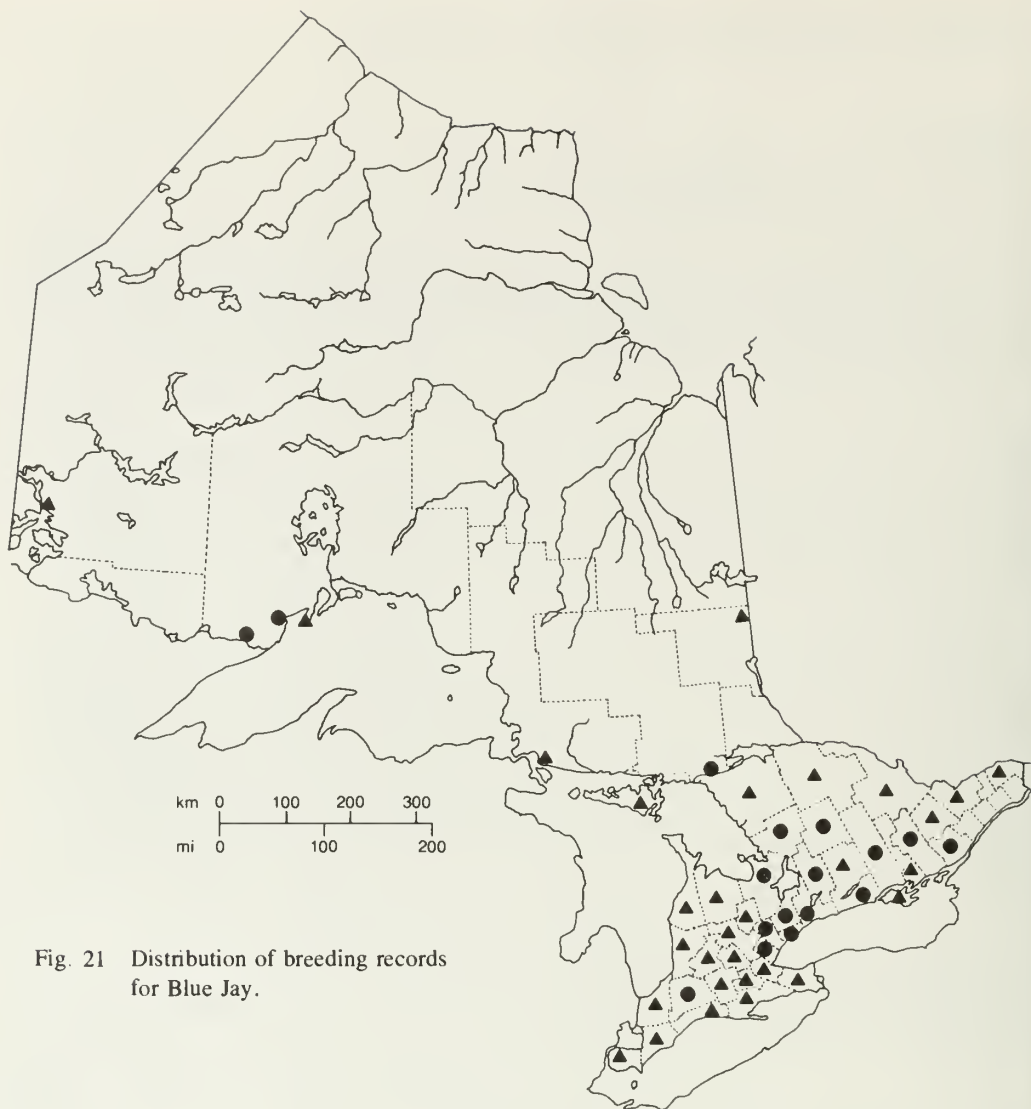


Fig. 21 Distribution of breeding records for Blue Jay.

Blue Jay, *Cyanocitta cristata* (Linnaeus)

Nidiology

RECORDS 393 nests representing 42 provincial regions.

Breeds in and at the edges of wooded areas which are more often open than dense, and which include mixed (70 nests), deciduous (43 nests), coniferous (21 nests), and unspecified (35 nests) stands; in urban and rural gardens, parks, and schoolyards (68 nests); in overgrown fields and field fencerows (30 nests); at marsh, river, and lake edges (8 nests); in orchards (6 nests); and along roadsides (1 nest). Although breeding habitats were sometimes in wet or swampy areas, their selection probably only indicated the presence of suitable trees for nesting.

Nests were invariably elevated, usually in living (8 in dead) trees, shrubs, and vines; however, 4 nests were on a building rafter, a sun-porch beam, a shelf under a house eave, and on a robin shelter on the side of a house, respectively. An unusual site was that of a nest in dead tree roots under the overhanging rim of an earthen bank. Coniferous trees (76 spp., 185 nests) were chosen somewhat more often than deciduous trees, shrubs, and vines (19 spp., 133 nests). Those most frequently selected were white cedar (58 nests), pine (most often white pine) spp. (53 nests), hawthorn spp. (53 nests), spruce spp. (37 nests), hemlock (19 nests), and maple spp. (19 nests). Nests were placed more often in small than in large trees and shrubs, and the DBH of 6 trees were 5, 7.5, 10, 10, 10, and 40.5 cm (2, 3, 4, and 16 inches). Nest locations in trees and shrubs were more often near the top than the middle or lower portions and were usually well hidden. Nests were in crotches (72 nests) and on horizontal branches (55 nests), and more were near or against the trunk (61 nests) than away from it (17 nests). Distances from the trunk of 13 nests ranged from 0.2 to 6 m (0.5 to 20 ft), with 7 averaging 1.2 to 3 m (4 to 10 ft). Six nests were positioned between 2 adjacent tree trunks. Although nests were usually freshly built, 1 nest was reused in 2 successive years, another was built on an old nest, and a third was built on top of a gray squirrel's drey. Heights of 317 nests ranged from 0.9 to 20 m (3 to 65 ft), with 159 averaging 2.4 to 4.6 m (8 to 15 ft).

Nests were bulky cups with rough exteriors. A second nest for a second brood was described as being very different from the first nest and was so sparsely constructed that it could be seen through. Exteriors were almost invariably composed of sticks and twigs to which were variously added paper/plastic/cellophane, coarse grasses, bark (usually birch), plant stalks and fibres, rootlets, vine tendrils, string and elastic, conifer needles, mud, leaves, and lichens. Linings were characteristically of rootlets and less often of grasses, fine twigs, bark strips, plant stems, shredded paper, feathers, leaves, hair, mosses, and pine needles. Nine nests had outside diameters ranging from 15 to 30 cm (5.9 to 11.8 inches), inside diameters from 8 to 13 cm (3.1 to 5.1 inches), outside depths from 6 to 13 cm (2.4 to 5.1 inches), and inside depths from 2.5 to 8 cm (1 to 3.1 inches).

EGGS 253 nests with 1 to 6 eggs; 1E (14N), 2E (17N), 3E (40N), 4E (79N), 5E (91N), 6E (12N).

Average clutch range 4 to 5 eggs (170 nests).

INCUBATION PERIOD 10 nests, 13 to 18 days: 1 of no more than 13 days, 2 of at least 15 days, 1 of 15 days, 1 of ca 16 days, 1 of 16 days, 1 of 17 days, 1 of at least 17 days, 1 of no more than 18 days, 1 of 18 days.

The lowest periods and the variability in length of the incubation periods suggest that incubation may commence before the last egg is laid.

EGG DATES 257 nests, 15 April to 8 July (302 dates); 128 nests, 15 May to 29 May. Double broods were reported.

Breeding Distribution

The Blue Jay breeds throughout southern Ontario and the southern portion of northern Ontario. A few are found as far north as Pickle Lake and Kapuskasing.

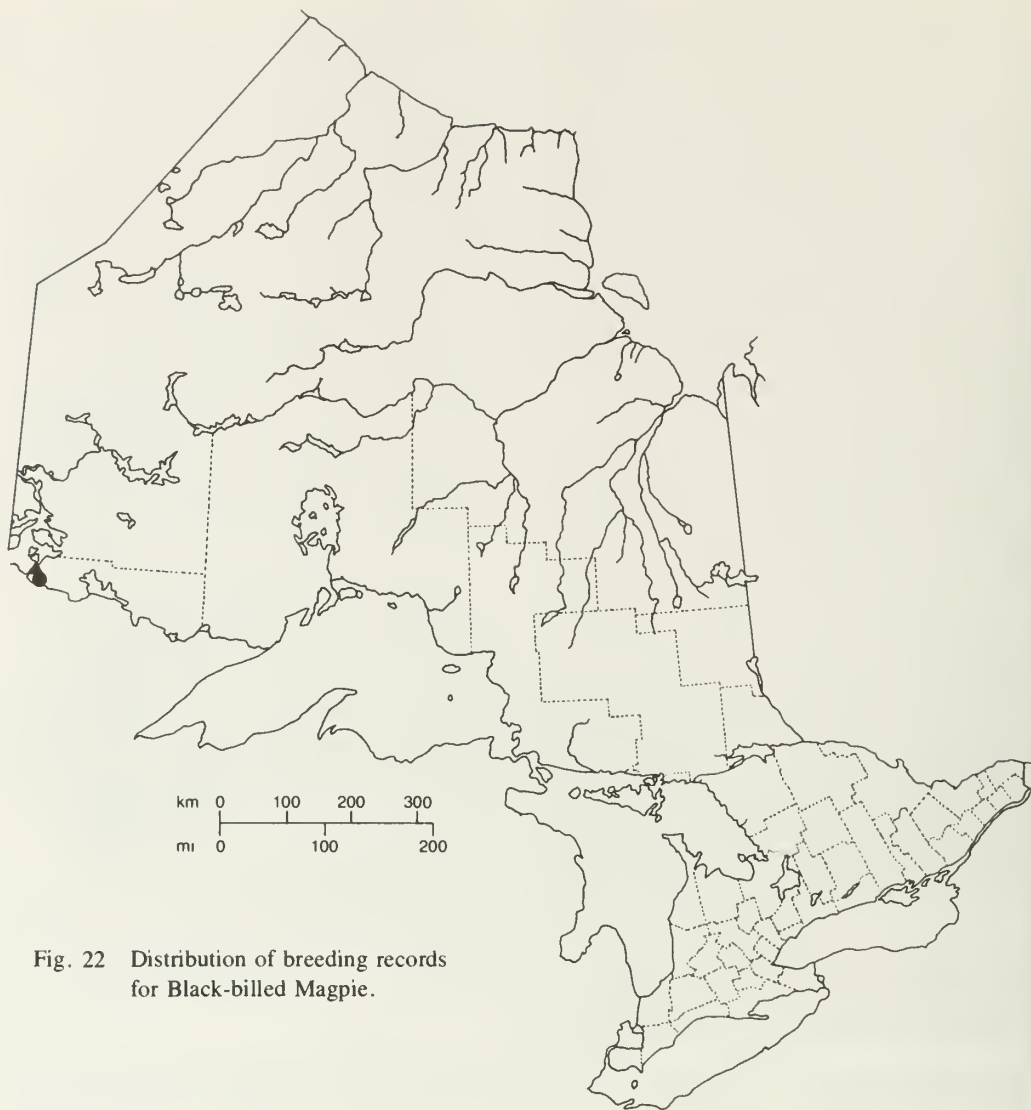


Fig. 22 Distribution of breeding records for Black-billed Magpie.

Black-billed Magpie, *Pica pica* (Linnaeus)

Nidiology

RECORDS 5 nests representing 1 provincial region.

Only 5 nests of the Black-billed Magpie have been found in Ontario, 1 each year since the first in 1980, and all of them in extreme western Ontario in Rainy River District.

Four of the nests were found in willow scrub areas at the edge of farm fields, and 1 of these was at a marsh edge; all 4 were in willow trees. The fifth nest was in an aspen wood, in a trembling aspen. The willow tree nests were at heights of 2.1, 3, 3, and 4 m (7, 10, and 13 ft). One nest was situated within 3 m (10 ft) of a previous year's nest, which was later occupied by Long-eared Owls.

Three of the nests were balls of sticks with an interior mud cup and were placed in tangles of willow branches. One of them was lined with a few strands of grass. A fourth nest lacked a full dome and had an outside diameter of 46 cm (18 inches) and an outside depth of 30.5 cm (12 inches).

One of the nests was newly completed and empty when found on 23 April, another contained 7 eggs on 24 May, a third was newly completed and empty on 29 May, and a fourth had flying young on 6 July.

Breeding Distribution

The only location in the province where the Black-billed Magpie (Fig. 206B) is known to breed is in western Rainy River District. Birds were noted regularly in winter in this region for many years, but not until 1980 were summering birds and nests found (Lamey, 1981) and photographed by W. Wilson (ROM PR 1169–1170) to confirm its breeding status in Ontario.



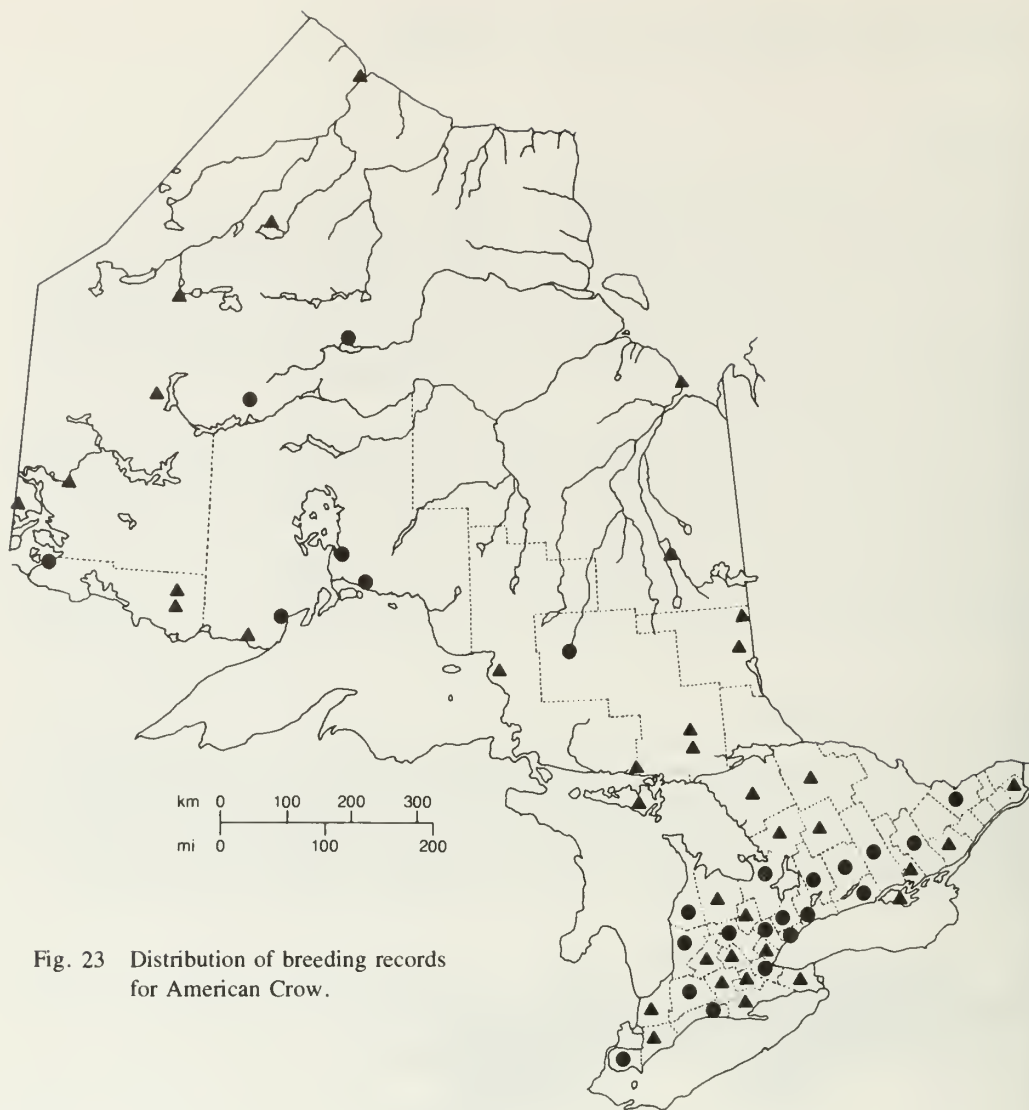


Fig. 23 Distribution of breeding records for American Crow.

American Crow, *Corvus brachyrhynchos* Brehm

Nidiology

RECORDS 748 nests representing 44 provincial regions.

Breeds in coniferous (45 nests), deciduous (45 nests), mixed (25 nests), and unspecified (14 nests) woodlands and reforestation areas; in farmland fencerows (32 nests); in fields, either overgrown or with isolated trees (27 nests); in urban cemeteries, gardens, parks, and other residential and industrial areas (25 nests); in shoreline tree strips (11 nests); on rocky islands (7 nests); in orchards (6 nests); and on treed sand dunes (3 nests). Small, open woodlands were selected more often than were large, dense tracts.

Nests were always elevated, usually in living (3 in dead) trees and shrubs (324 nests). Two nests were on top of dead stubs, and a third was in a crevice on a cliff face at a height of 15 m (50 ft). Coniferous trees (7 spp., 176 nests) were somewhat preferred over deciduous (16 spp., 150 nests), and those most frequently chosen were pine spp. (74 nests), spruce spp. (45 nests), white cedar (36 nests), oak spp. (24 nests), maple spp. (20 nests), willow spp. (17 nests), and beech (16 nests). Nests were usually well hidden and were placed in crotches and on horizontal branches, much more often near or at the trunk than away from it. Ten nests were reported away from the main trunk or centre of the shrub or tree, and 5 of these were at distances that ranged from 0.5 to 6 m (1.6 to 20 ft). Many more nests were in the upper one-third of the tree or shrub than at lower levels. Nest sites located in the same area and even in the same tree were reported in subsequent years, and 1 nest was repaired and reused the next year. One active crow's nest was reported to have been previously occupied by a Long-eared Owl. One nest was 30 m (100 ft) from another crow's nest, and a second was 60 m (200 ft) from an active nest of Cooper's Hawk. Heights of 292 nests ranged from 0.6 to 26 m (2 to 85 ft), with 146 averaging 5.5 to 10.7 m (18 to 35 ft). A nest at a height of 0.6 m (2 ft) was found on a rocky island where only short trees were available.

Nests were large cups or platforms with deep bowls. Exteriors were almost invariably formed of sticks which ranged in diameter from less than 0.6 to 3.5 cm (0.25 to 1.5 inches). One nest contained no sticks and was entirely formed of reeds, grass, and mud. Other outer materials were grasses, bark pieces, mud, plant stalks, twine, paper, roots, leaves, and cow dung. Linings were characteristically formed of bark strips (usually cedar), and less often of hair (commonly horse and cow), grasses, twine, mosses, twigs, plant stalks, pine needles, rootlets, paper, feathers, and leaves. Fourteen nests had outside diameters ranging from 30.5 to 76 cm (12 to 30 inches), inside diameters from 15 to 21.6 cm (6 to 8.5 inches), outside depths from 22.9 to 30.5 cm (9 to 12 inches), and inside depths from 10 to 15 cm (4 to 6 inches).

EGGS 316 nests with 1 to 8 eggs; 1E (9N), 2E (14N), 3E (28N), 4E (103N), 5E (122N), 6E (37N), 7E (2N), 8E (1N).

Average clutch range 4 to 5 eggs (225 nests).

The 8-egg clutch was believed to be 2 clutches, since there were 2 adults on the nest and 2 groups of 4 eggs showing different colour patterns.

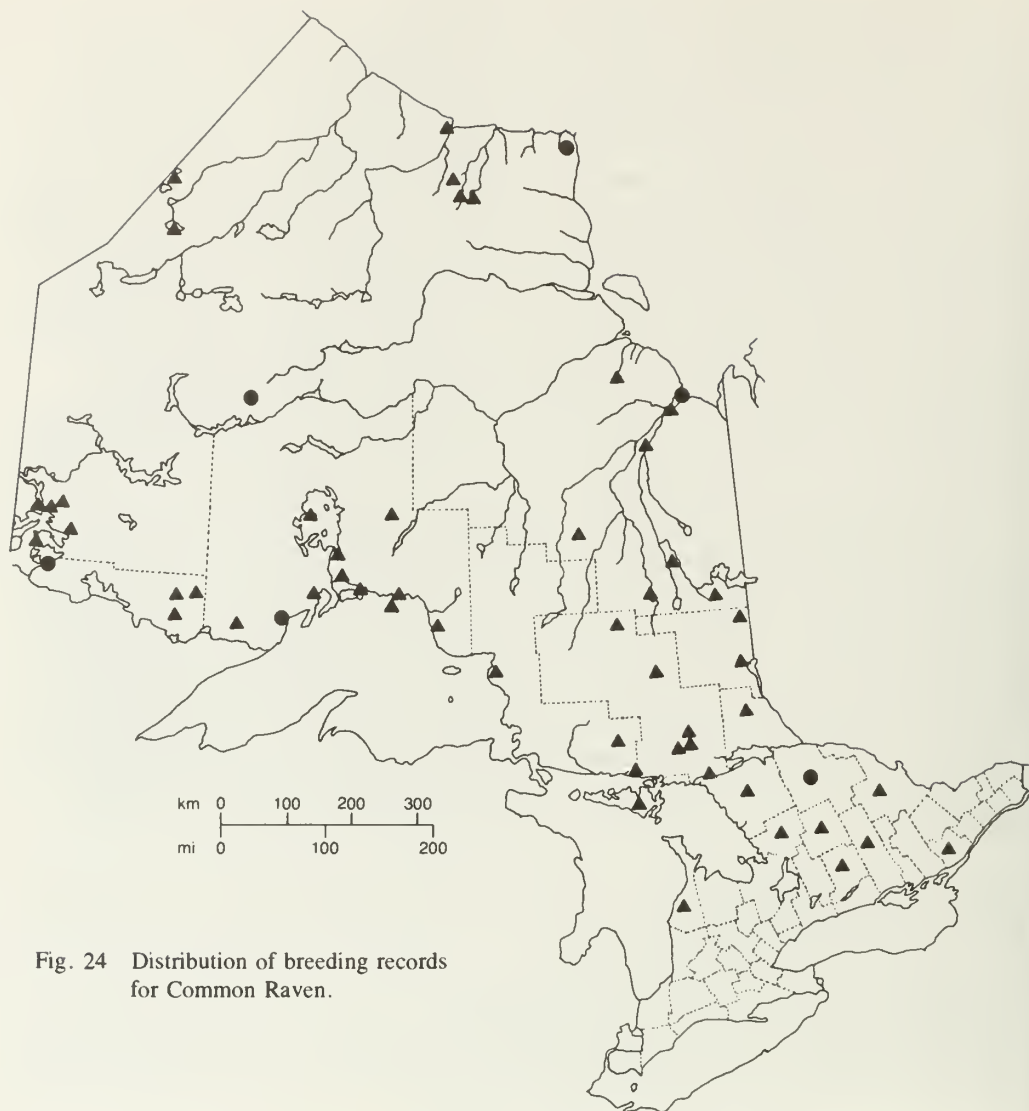
Cowbird parasitism One occupied nest contained a single, punctured cowbird egg that may have been brought to the nest by the crow.

INCUBATION PERIOD No information.

EGG DATES 320 nests, 3 March to 20 June (340 dates); 160 nests, 22 April to 6 May. Renestings were reported after egg loss and occurred once in the same nest.

Breeding Distribution

The American Crow breeds throughout the province, but may be scarce or absent from heavily forested and tundra areas.



Common Raven, *Corvus corax* Linnaeus

Nidiology

RECORDS 137 nests representing 16 provincial regions.

Breeds in a variety of habitats, including forested areas, open grassland and shrubby areas, locations near buildings and hydro right-of-ways, and tundra areas. In wooded areas mixed stands were preferred over deciduous or coniferous stands. Most nest sites, even in woodlands and especially those on cliffs, overlooked open vistas and indicated a preference for such exposure. A proximity to water (88 nests) was often noted.

Nests were variously positioned on ledges and crevices of cliffs (70 nests, 3 of which were on the sides of open-pit mines), in trees (34 nests), on beams under bridges (6 nests), on hydro towers (6 nests), on grain elevators (4 nests), on lumberyard incinerators (3 nests), on a small shed (2 nests), and on radar-dish girders (1 nest). Tree nests were usually in living (32 nests) and occasionally in dead (2 nests) trees, deciduous (2 spp., 18 nests) and coniferous (2 spp., 15 nests). Poplar spp. (17 nests) were preferred as nest trees over spruce spp. (10 nests) and pine spp. (5 nests). One nest tree had a DBH of 20 cm (8 inches). Tree nests were usually near the tops of trees and in crotches against the main trunk. Cliff nests and those on various manmade objects faced in all directions, but southwesterly exposures were reported most commonly. Nests were frequently reused from year to year, and, while ravens usually built their own nests, they occasionally used old nests of Bald Eagle. Raven nests have been built on cliff ledges previously occupied by Peregrine Falcons. Raven nests have been taken over by Great Horned Owls. Heights of 50 cliff nests ranged from 1.8 to 152 m (6 to 500 ft), with 25 averaging 12 to 24 m (40 to 80 ft). Heights of 32 tree nests ranged from 6 to 27.5 m (20 to 90 ft), with 16 averaging 10.5 to 15 m (35 to 50 ft). Heights of 19 nests on manmade objects ranged from 3 to 35 m (10 to 115 ft), with 10 averaging 7.5 to 18 m (25 to 60 ft).

Nests (Fig. 172A, B) were bulky masses of sticks and twigs having deep, formed cups at their interior. The sticks and twigs of the nest exterior had diameters of 0.6 to 1.9 cm (0.25 to 0.75 inches). Nest linings, in order of preference, were of mammal hair, grasses, bark strips, fine twigs, plant stalks, mosses, rootlets, catkins, and bones. Outside diameters of 8 nests ranged from 51 to 152 cm (20 to 60 inches), with 4 averaging 61 to 91 cm (24 to 36 inches); inside diameter of 1 nest was 15 cm (6 inches); outside depths of 2 nests were 30.5 and 45.5 cm (12 and 18 inches); inside depth of 1 nest was 10 cm (4 inches).

EGGS 31 nests with 2 to 7 eggs; 2E (1N), 3E (6N), 4E (13N), 5E (10N), 7E (1N).

Average clutch range 4 to 5 eggs (23 nests).

INCUBATION PERIOD 4 nests: 1 of at least 20 days, 1 of ca 21 days, 1 of 21 days, 1 of ca 24 days.

Incubation began before the laying of the last egg.

EGG DATES 16 nests, 10 March to 16 May (23 dates); 8 nests, 26 March to 10 April.

Breeding Distribution

The Common Raven (Fig. 172A) breeds throughout northern Ontario. In southern Ontario it nests sparingly as far south as the Bruce Peninsula and Peterborough and Leeds counties. In recent years this species has been expanding slowly southwards.

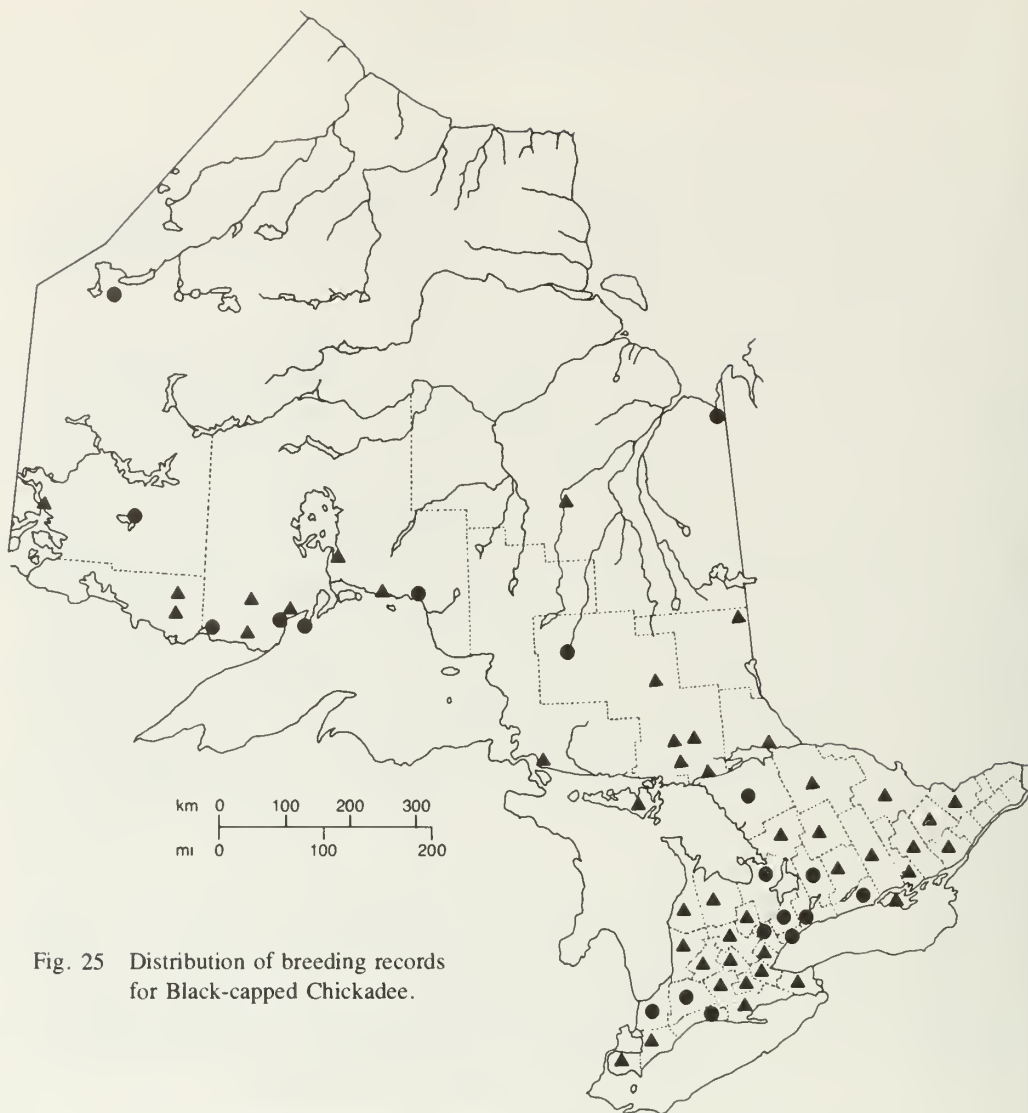


Fig. 25 Distribution of breeding records for Black-capped Chickadee.

Black-capped Chickadee, *Parus atricapillus* Linnaeus

Nidiology

RECORDS 416 (421 nests) representing 44 provincial regions.

Breeds usually in open woods and woodland edges, with mixed woods (93 nests) selected more often than deciduous (43 nests) or coniferous (15 nests) woods; in agricultural areas, including overgrown fields and pastures, hedgerows, flood plains, and orchards (55 nests); farm and residential gardens (22 nests); beaver ponds, bogs, and marshes (10 nests); park and cottage areas (6 nests); sand-dune areas (5 nests); and burns (1 nest). Nests were often beside roads and bodies of water. They were commonly situated in wet locations, which probably indicated only the abundance of preferred dead trees in such areas.

Nests were in cavities in standing tree stumps (222 nests), trunks and branches of whole trees (71 nests), bird boxes (35 nests), wooden fence posts (25 nests), fallen tree branches and trunks (5 nests), and standing iron posts (2 nests). Nest trees were almost invariably dead, but 7 were alive (3 with dead branches, 2 with dead tops, 1 with a rotted centre, and 1 with a natural cavity). Tree-stump nests were most often in holes (77 nests), with a lesser number in a hollow cavity at the stump's broken top (35 nests). Cavities excavated by this species in stumps and trees outnumbered natural and old woodpecker cavities, which were also used. Deciduous trees (15 spp., 192 nests) were selected far more often than coniferous (5 spp., 21 nests), and among those most commonly used for nests were birch spp. (82 nests), poplar spp. (37 nests), elm spp. (20 nests), maple spp. (15 nests), and cedar spp. (11 nests). The diameters (DBH) of 23 nest stumps and trees ranged from 7.5 to 61 cm (3 to 24 inches), with 12 averaging 10 to 18 cm (4 to 7 inches). Heights of 307 nests ranged from 0 to 15 m (0 to 50 ft), with 154 averaging 0.9 to 3.7 m (3 to 12 ft). In 1 of 2 nests with entrance holes at ground level, the actual nest was 11.4 cm (4.5 inches) below ground.

Nest structures within the cavities were usually thick, woven cups with shallow bowls, which had exteriors of mosses, grasses, plant fibres, feathers, bark, twigs, leaves, and pine needles. Linings were predominantly of animal fur (often rabbit and sheep), plant down, feathers, and plant and root fibres. Some nests were homogeneous structures of hair (8 nests), moss (1 nest), and plant fibres (1 nest), and three cavities were unlined. The occasional nest containing twigs and cellophane may have been the result of such materials having been brought by previous occupants (e.g., House Wren). Three nests had wall diameters of 5 to 10 cm (2 to 4 inches); 1 nest had an inside diameter of 4.3 cm (1.7 inches), an outside depth of 2 cm (0.8 inches), and an inside depth of 1.5 cm (0.6 inches). Entrance-hole diameters of 10 cavities ranged from 2.5 to 5.7 cm (1 to 2.2 inches); cavity depths of 30 nests ranged from 7.6 to 45.7 cm (3 to 18 inches), with 15 averaging 15 to 25.5 cm (6 to 10 inches).

EGGS 127 nests with 1 to 10 eggs; 1E (1N), 2E (2N), 3E (6N), 4E (13N), 5E (14N), 6E (42N), 7E (29N), 8E (16N), 9E (3N), 10E (1N).

Average clutch range 6 to 7 eggs (71 nests).

Two broods fledged from a bird-box nest were reported, with the second clutch commencing within 1 week of the initial fledging.

Cowbird parasitism 192 nests with 2 parasitized (1%).

INCUBATION PERIOD 6 nests, 11 to 17 days: 1 of at least 11 days, 1 of at least 12 days, 1 of 12 days, 2 of 13 days, 1 of 17 days.

The final period probably indicated an abnormal delay.

EGG DATES 125 nests, 26 April to 14 July (142 dates); 63 nests, 18 May to 31 May.

Breeding Distribution

The Black-capped Chickadee breeds across the province as far north as Favourable Lake and Fort Albany.

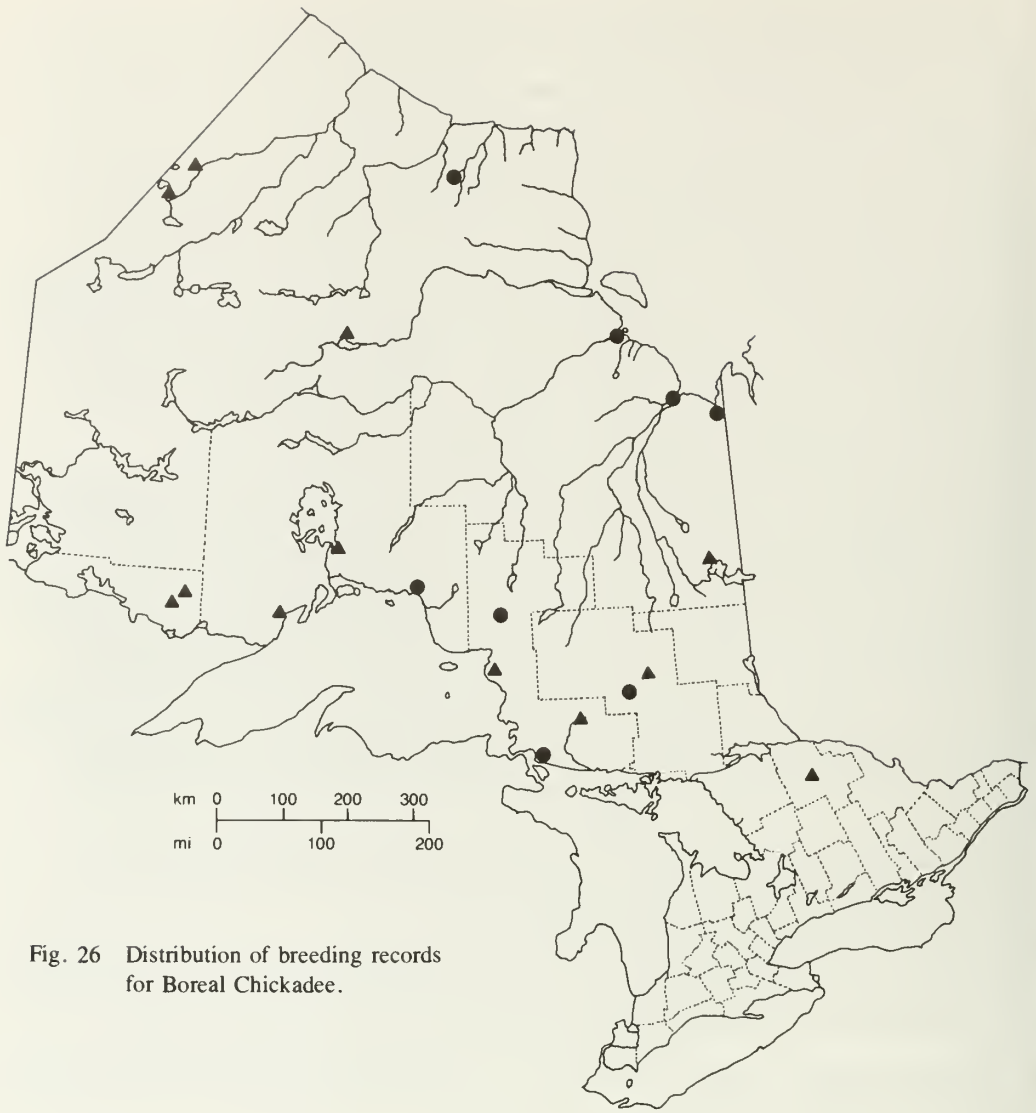


Fig. 26 Distribution of breeding records for Boreal Chickadee.

Boreal Chickadee, *Parus hudsonicus* Forster

Nidiology

RECORDS 28 nests representing 6 provincial regions.

Breeds in both closed and open coniferous (8 nests) and mixed (4 nests) woods, black spruce bogs (3 nests), an open heath area (1 nest), an open field (1 nest), and an open wooded marsh (1 nest). Some nest sites were at forest edges, near shorelines, and near a railroad right-of-way. Habitats were more often wet than dry.

Nests were in cavities in standing tree stumps (13 nests), trunks and branches of whole trees (7 nests), and an uprooted stump (1 nest). Nest stumps and trees were usually dead, but 3 were living or partly alive. One tree stump had a DBH of 23 cm (9 inches). Nests were more often in holes or natural cavities in the side of stumps and trees (13 nests) than in cavities in the top of broken stumps (5 nests). Nest cavities were usually excavated or enlarged by this species (12 nests), but 3 were not; once, an old woodpecker cavity was used. Deciduous trees (2 spp., 10 nests) were selected slightly more often than coniferous (4 spp., 8 nests), and the 6 species reported were birch spp. (6 nests), poplar spp. (4 nests), balsam fir (2 nests), black spruce (2 nests), cedar spp. (2 nests), and pine spp. (2 nests). Heights of 21 nests ranged from 0.3 to 10.5 m (1 to 35 ft), with 11 averaging 0.9 to 4.3 m (3 to 14 ft). Two nests in cavities in hollow stumps were at ground level. The use of nest boxes was also reported.

Nests were composed of soft materials, including animal fur, mosses, plant down, lichens, and grasses. Two of 12 nests were formed exclusively of fur. One cavity had a depth of 12.7 cm (5 inches), another 20.3 cm (8 inches), and 2 others were 30.5 cm (12 inches) in depth.

EGGS 13 nests with 4 to 7 eggs; **4E** (2N), **5E** (3N), **6E** (7N), **7E** (1N).

Average clutch range 6 eggs (7 nests).

INCUBATION PERIOD 7 nests: 2 of 11 days, 3 of 13 days, 2 of at least 13 days.

EGG DATES 12 nests, 22 May to 17 June (18 dates); 6 nests, 28 May to 6 June.

Breeding Distribution

The Boreal Chickadee nests throughout northern Ontario (except tundra areas), but its breeding range extends into southern Ontario only to about southern Nipissing District.

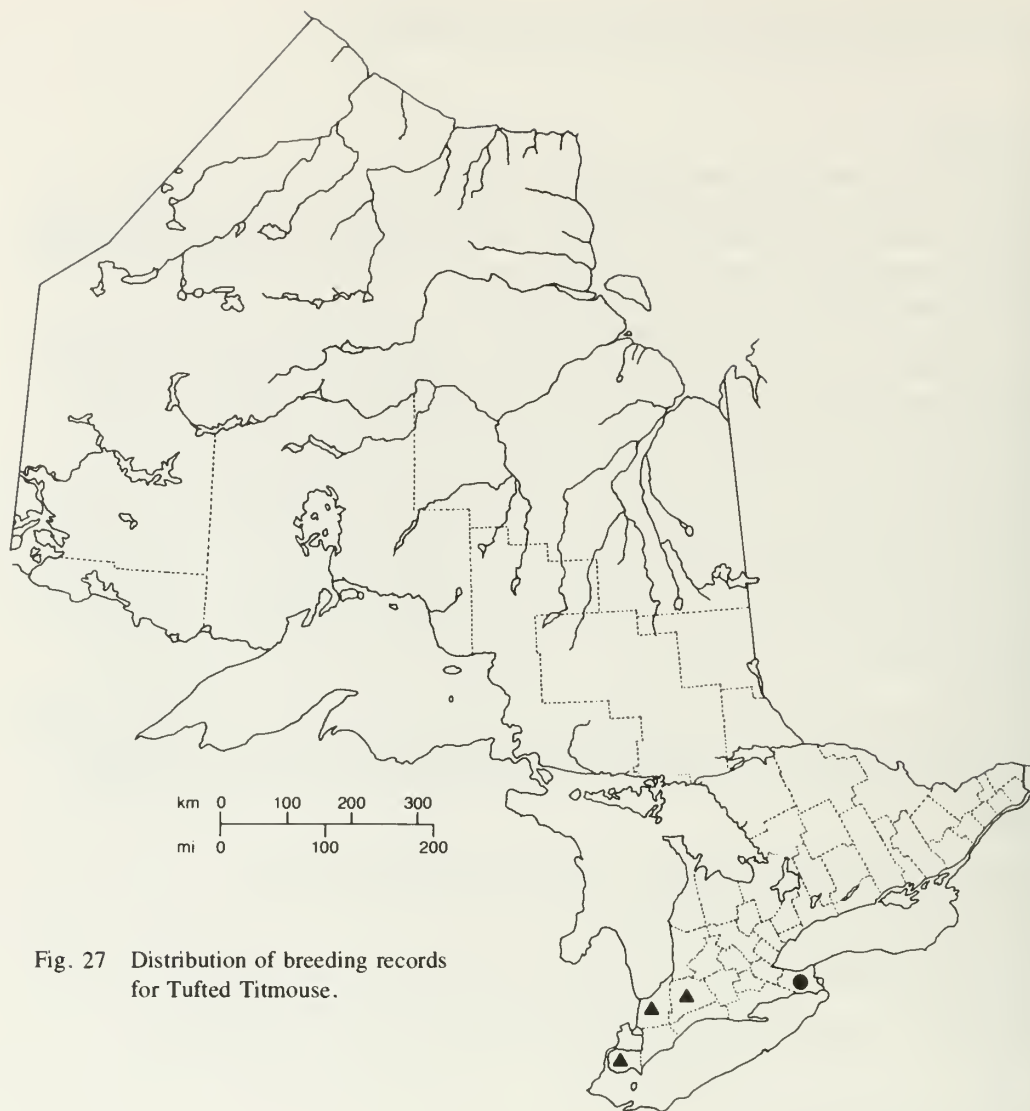


Fig. 27 Distribution of breeding records for Tufted Titmouse.

Tufted Titmouse, *Parus bicolor* Linnaeus

Nidiology

RECORDS 8 nests representing 4 provincial regions.

A breeding bird of the Deciduous Forest region, the Tufted Titmouse has been reported nesting on only a few occasions, in extreme southern Ontario. The breeding habitats recorded were deciduous and mixed woods, a wooded sand-dune area, and a residential garden.

All nests were in natural cavities in living trees except 1, which was in an obliquely leaning iron pipe set in the ground. Nest trees were maple spp. (2 nests), oak spp. (1 nest), and apple (1 nest). Heights of 5 nests in natural cavities ranged from 2 to 16.8 m (6.5 to 55 ft), with 3 averaging 9 to 13.5 m (30 to 45 ft). The nest in the iron pipe was 30.5 cm (12 inches) below the top of the pipe, which was 147 cm (58 inches) above ground.

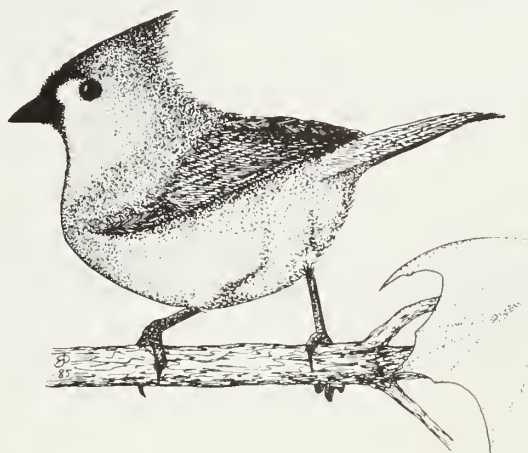
EGGS 2 nests with 3 and 4 eggs.

INCUBATION PERIOD No information.

EGG DATES 2 nests, mid-May and 15 June.

Breeding Distribution

The Tufted Titmouse is a relatively recent addition to the list of breeding birds of Ontario. The first reported sighting was in 1914 at Point Pelee. Breeding was indicated for the first time in 1936 when young were seen with adults at Hamilton, but only in 1953 was an undocumented nest first located at Samia, Lambton County (Baillie, 1960). Nesting in the province was not confirmed until 1971, when D. Workman photographed a young bird leaving a nest at Port Colborne, Niagara RM (ROM PR 1007-1011). Although there are summer sightings north to Grey County (Baillie, 1960), there is no documented evidence of breeding north of the Deciduous Forest region.



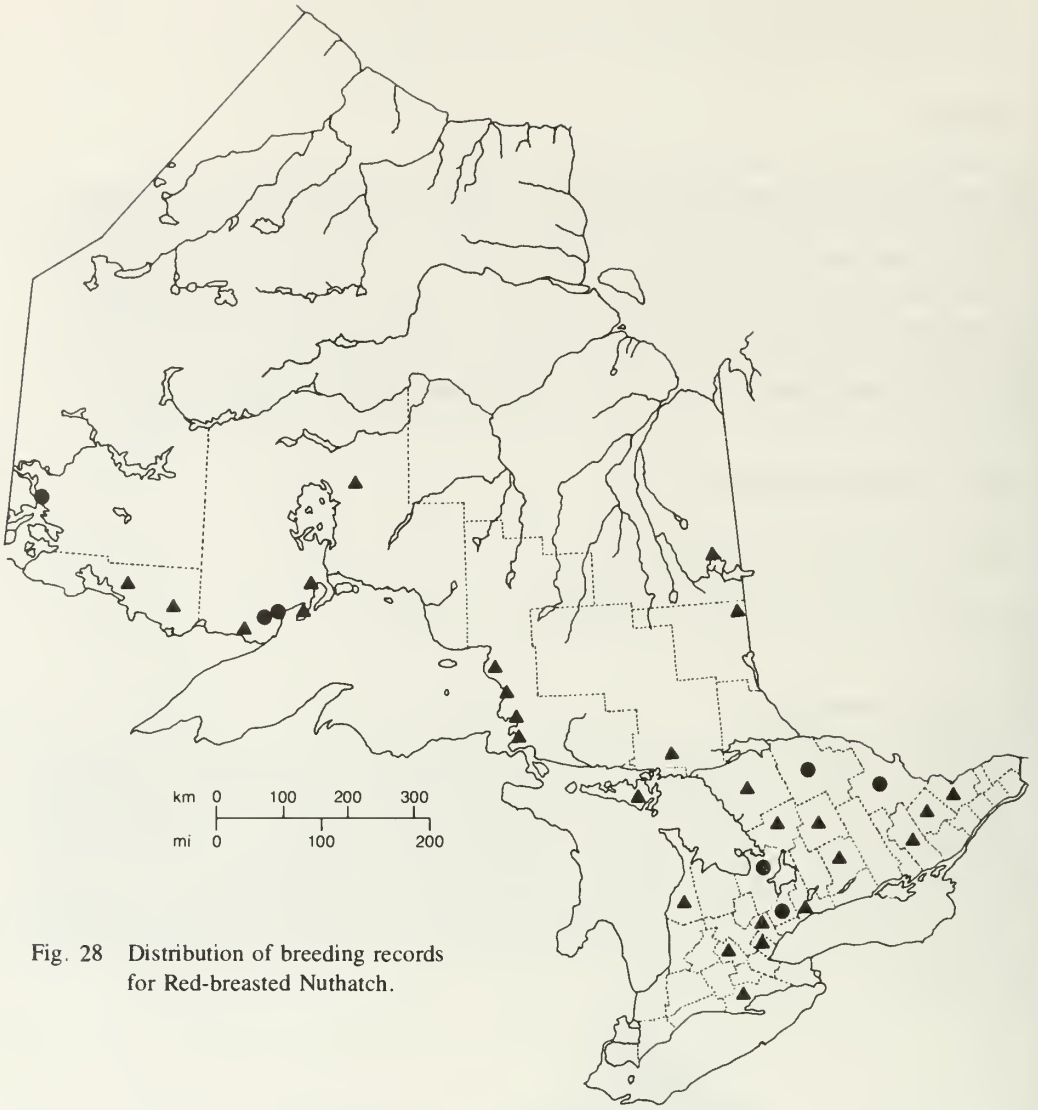


Fig. 28 Distribution of breeding records for Red-breasted Nuthatch.

Red-breasted Nuthatch, *Sitta canadensis* Linnaeus

Nidiology

RECORDS 66 nests representing 21 provincial regions.

Breeds usually in mixed woods (33 nests), less often in coniferous stands (5 nests), and rarely in deciduous woods (3 nests). Breeding habitats were more often wet than dry, which probably only indicated the availability of dead trees for nesting. Five nests were at beaver ponds, and most nests were near water, woodland edges, clearings, and roads, possibly indicating a preference for open areas near the nest.

This species usually excavated its own cavities, and only occasionally were old woodpecker nests and natural cavities such as knot-holes used. Two nests were in birdhouses. Most nests were in the trunks of dead tree stubs (48 nests), usually near the top. Three nests were recorded in dead or dying branches, and only 2 nests were recorded in living trees, 1 of which was dying. The DBH of 4 nest trees were 12.5, 15, 15, and 20.5 cm (5, 6, and 8 inches). No preference was noted for a particular direction for the cavity entrance. One nest was 9 m (30 ft) from an active nest of Red-shouldered Hawk. Deciduous trees (6 spp., 41 nests) were preferred for nesting over coniferous trees (3 spp., 8 nests), with poplar spp. (17 nests), birch spp. (16 nests), and spruce spp. (5 nests) selected most often. Heights of 61 nests ranged from 1.5 to 15 m (5 to 50 ft), with 31 averaging 3 to 9 m (10 to 30 ft).

Cavity entrances, whether excavated or not, invariably had conifer pitch applied around them (Fig. 176A), particularly heavily at the bottom lip of the entrance. The amount of pitch was noted to increase during the nesting period. Nest cavities were characteristically lined with bark strips (often cedar). Feathers were sometimes incorporated, and dried moss was observed in 1 nest. Diameters of three entrances were 2.8 by 3.8, 2.5, and 5.7 cm (1.1 by 1.5, 1, and 2.25 inches), and 4 cavities had depths of 7.5, 12.5, 15, and 15 cm (3.5, 5, and 6 inches).

EGGS 14 nests with 1 to 7 eggs; 1E (1N), 2E (1N), 3E (1N), 4E (2N), 5E (3N), 6E (4N), 7E (2N).

Average clutch range 5 to 6 eggs (7 nests).

INCUBATION PERIOD No information.

EGG DATES 12 nests, 9 May to 8 June (13 dates); 6 nests, 25 May to 4 June.

Breeding Distribution

The Red-breasted Nuthatch breeds across Ontario as far north as Pickle Lake in Kenora District, and Moosonee in Cochrane District, but is scarce in southern agricultural areas.

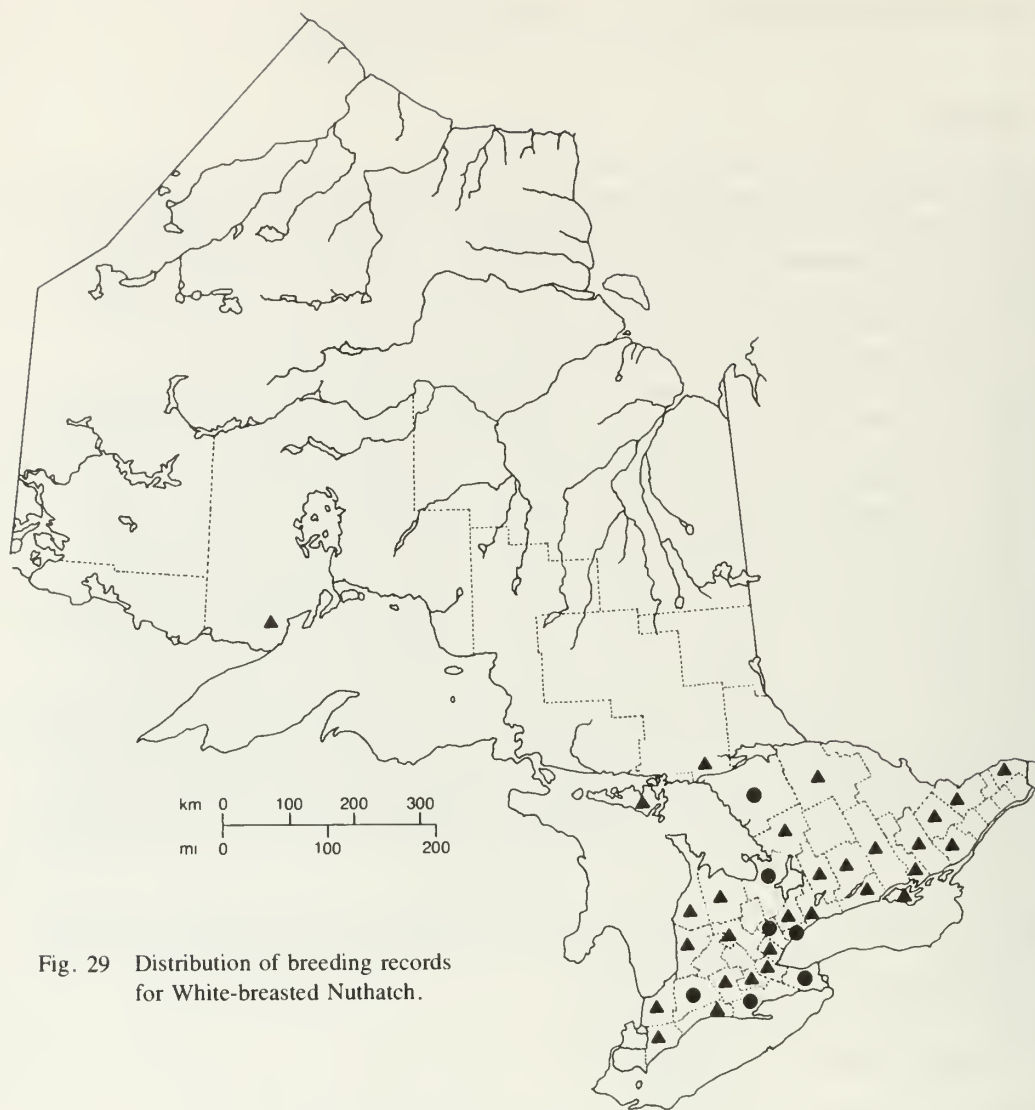


Fig. 29 Distribution of breeding records for White-breasted Nuthatch.

White-breasted Nuthatch, *Sitta carolinensis* Latham

Nidiology

RECORDS 93 nests representing 34 provincial regions.

Breeds most often in mature deciduous woods, less often in mixed woods, and rarely in coniferous stands (2 nests). Four nests were recorded in residential areas, and 1 each in a flood plain and a beaver pond. Woodland edges were definitely favoured over more central locations, and the proximities to water, roads, clearings, and fields indicated a preference for open areas near the nest.

Nests were usually built in pre-existing tree cavities, although 1 pair was observed apparently excavating or enlarging a cavity. Two nests were recorded in tree stumps. Natural cavities (54 nests) were greatly preferred over old cavities of woodpeckers and other species (8 nests). Three nests were reported in bird boxes. Living trees were chosen more often than dead trees, and nest cavities were usually in the main trunk, with 2 nests noted in branch cavities. The DBH of 3 nest trees ranged from 25.5 to 35.5 cm (10 to 14 inches). Natural cavity nests were in splits and knot-holes and faced indiscriminately in all directions. Nest cavities were sometimes reused in successive or subsequent years. One nest was 1 m (3.3 ft) beneath an active nest of Brown Creeper in the same tree. Deciduous trees (10 spp., 54 nests) were much more often selected than coniferous trees (2 spp., 9 nests), with maple spp. (18 nests), oak spp. (11 nests), elm spp. (7 nests), and pine spp. (5 nests) chosen most frequently. Heights of 72 nests ranged from 0.5 to 20 m (1.5 to 65 ft), with 36 averaging 1.8 to 9 m (6 to 30 ft).

Cavities were lined, in order of preference, with bark chips and fibres, mammal hair, feathers, twigs, grasses, and rag pieces. In 1 cavity the eggs were laid on bare wood chips with a few added nuthatch feathers. Depending upon their variable shape, the diameters of 11 cavity entrances ranged from 1.8 to 15 cm (0.7 to 6 inches), with 5 averaging 3.8 to 5.7 cm (1.5 to 2.25 inches). Two cavities were 25.5 cm (10 inches) in depth.

EGGS 21 nests with 3 to 8 eggs; 3E (1N), 4E (2N), 5E (1N), 6E (6N), 7E (5N), 8E (6N).

Average clutch range 6 to 8 eggs (17 nests).

Cowbird parasitism 25 nests with 1 parasitized (4%).

INCUBATION PERIOD No information.

EGG DATES 19 nests, 28 April to 29 May (21 dates); 10 nests, 5 May to 13 May.

Breeding Distribution

The White-breasted Nuthatch breeds throughout southern Ontario, although it is absent from areas of pure coniferous forest. Its breeding range extends marginally into northern Ontario—along the north shore of Lake Huron, near Thunder Bay, and possibly also in western Rainy River District.

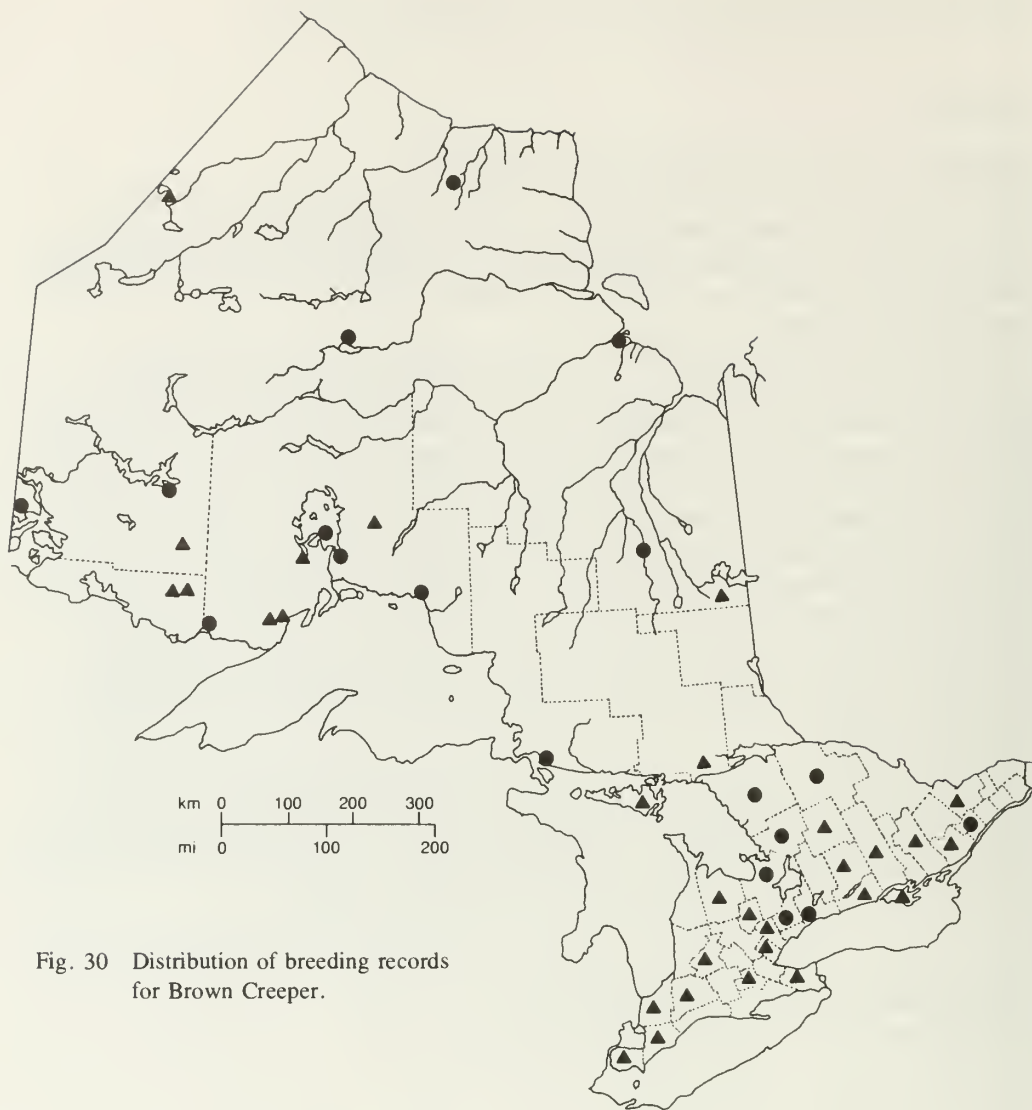


Fig. 30 Distribution of breeding records for Brown Creeper.

Brown Creeper, *Certhia americana* Bonaparte

Nidiology

RECORDS 76 nests representing 28 provincial regions.

Breeds most often in mixed (17 nests), deciduous (13 nests), and coniferous (7 nests) woods; and less often in beaver ponds with standing dead trees (8 nests), spruce bogs (4 nests), and the edges of shrubby fields (2 nests). Wet areas outnumbered dry, but probably indicated only the location of the preferred dead nesting trees.

Nests were usually situated in dead trees and stubs (1 nest in a living tree), and occasionally in fence posts (2 nests); 1 nest was behind a piece of tin under the roof logs of an outhouse. Most nests (53) were under loose bark, and a few were in cavities (3 nests) or splits in tree trunks (2 nests). They were almost invariably placed against the main trunk, with only 1 nest reported against a large limb. Deciduous trees (5 spp., 28 nests) were slightly favoured over coniferous (5 spp., 23 nests); those most often selected were elm spp. (19 nests), spruce spp. (8 nests), balsam fir (8 nests), and pine spp. (4 nests). The DBH of 4 nest trees ranged from 15 to 41 cm (6 to 16 inches). An active nest of this species was 1 m (3.3 ft) distant from an active nest of White-breasted Nuthatch in the same tree, and a second nest was 23 m (75 ft) distant from another creeper's nest in a different tree. Heights of 60 nests ranged from 0.6 to 12 m (2 to 40 ft), with 30 averaging 1.4 to 3.7 m (4.5 to 12 ft).

Typical nests were built between loose bark and the tree trunk, and often had a wide outside diameter from side to side, but were narrow from front to back and in outside depth. Nests were curved to conform to their position behind the bark, and their ends often curved upwards in a crescent shape. At least 2 nests were noted to be attached by spider webs to the bark only, rather than to the tree trunk. Nests were formed of twigs having diameters of 0.2 to 0.3 cm (0.08 to 0.1 inches), bark pieces and fibres, grasses, mosses, hair, spider webs and cases, plant fibres, plant down, leaves, and rootlets. Linings were of bark pieces and fibres, feathers, plant fibres, hair, and grasses. Seven nests had outside diameters ranging from 4.5 to 10 by 10 to 18 cm (1.8 to 4 by 4 to 7 inches), inside diameters from 3 to 4 by 4 to 5.5 cm (1.2 to 1.6 by 1.5 to 2.2 inches), outside depths from 5.5 to 22 cm (2.2 to 8.7 inches), and inside depths from 2 to 4 cm (0.8 to 1.6 inches).

EGGS 33 nests with 1 to 8 eggs; 1E (2N), 3E (1N), 4E (4N), 5E (12N), 6E (11N), 7E (2N), 8E (1N).

Average clutch range 5 to 6 eggs (23 nests).

INCUBATION PERIOD 1 nest, 13 to 14 days.

EGG DATES 27 nests, 23 April to 13 July (34 dates); 14 nests, 26 May to 9 June.

Breeding Distribution

The Brown Creeper (Fig. 176B) breeds throughout the province in treed areas.

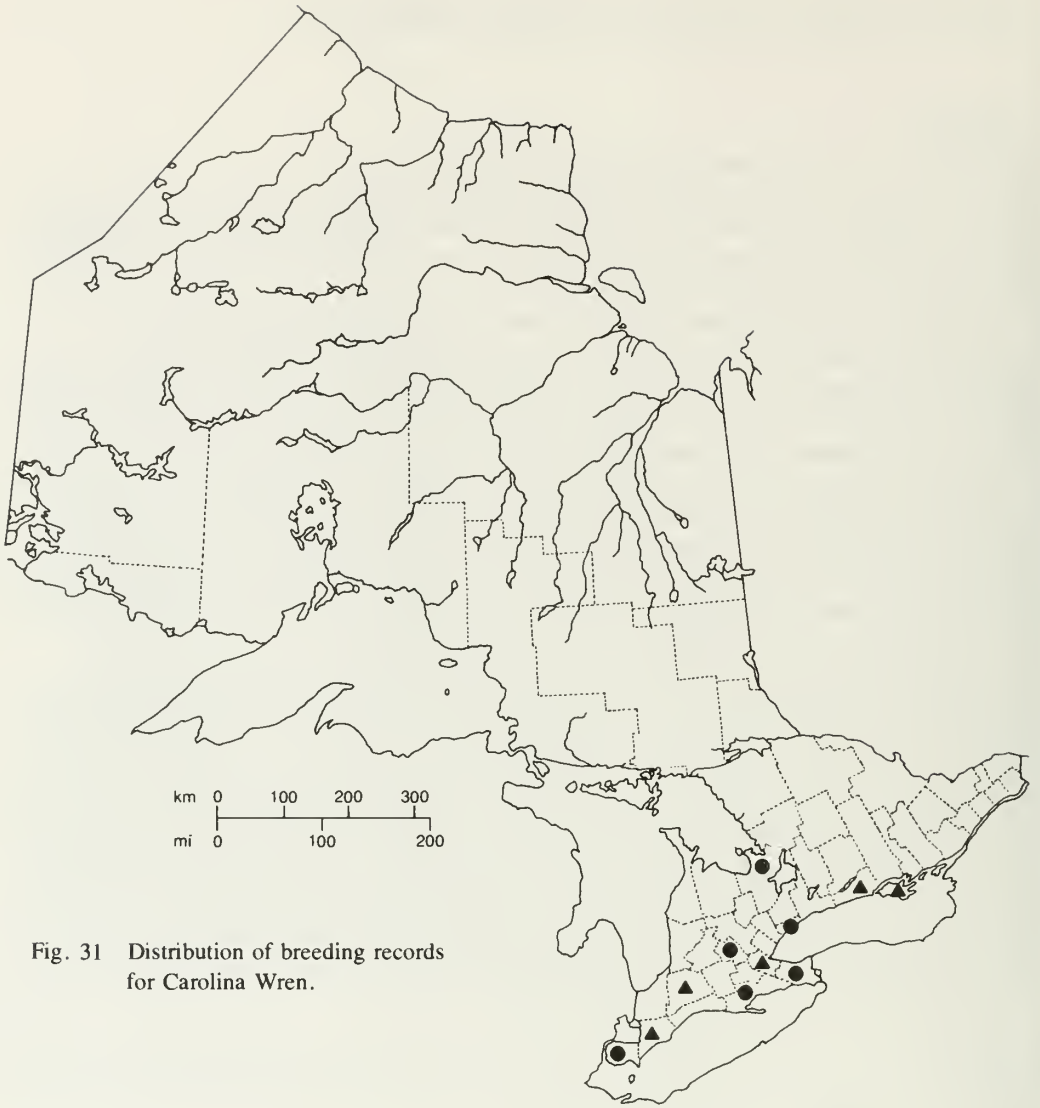


Fig. 31 Distribution of breeding records for Carolina Wren.

Carolina Wren, *Thryothorus ludovicianus* (Latham)

Nidiology

RECORDS 30 (34 nests) representing 10 provincial regions.

A bird of the Deciduous Forest region, the Carolina Wren breeds in buildings in residential areas (9 nests), in buildings in wooded areas (5 nests), and in deciduous woods (6 nests).

Nests in buildings were variously located on shelves, on beam ledges, in wash-basins, in six-quart baskets, in an empty box, in a nail barrel, in a travel-bag, in a funnel, and under an overturned canoe between a seat and a seat-pad. Nests in natural sites were in cavities in stumps and fallen trees, and 1 nest was in a brush-pile. Regardless of their location, nests tended to be hidden at a depth in recessed areas. They were positioned in existing tree cavities with hole entrances, among roots in a 25-cm (10 inch) funnel, in the bottom of a nail barrel, and in the bottom basket of an attached group of six-quart baskets (Fig. 192B). Some nests were reused in successive second nestings and in successive years. Heights of 16 nests ranged from 0.5 to 2.4 m (1.5 to 8 ft), with 8 averaging 1.2 to 1.8 m (4 to 6 ft).

Nests were usually large, loosely built structures with a small opening at one end. In order of preference they were composed of grasses, leaves, rootlets, pine needles, twigs, mosses, wet stems, and mud. Linings were of hair, grasses, feathers, and snake scales. One nest was reported to be one and one-half times the size of a coconut. Five nests had outside diameters ranging from 12 to 20 cm (4.7 to 7.9 inches), inside diameters from 6 to 7 cm (2.4 to 2.7 inches), outside depths from 8 to 12 cm (3.1 to 4.7 inches), and inside depths from 5 to 6.5 cm (2 to 2.6 inches).

EGGS 17 nests with 3 to 9 eggs; **3E** (3N), **4E** (1N), **5E** (12N), **9E** (1N).

Average clutch range 5 eggs (12 nests).

INCUBATION PERIOD 2 nests: 1 of 14 days, 1 of 15 days.

EGG DATES 12 nests, 5 April to 8 August (17 dates); 6 nests, 10 May to 22 May.

On four occasions double broods were reported, either in the same nest or in different nests in the same locality.

Breeding Distribution

The Carolina Wren is a southern species reaching its northern limit in southern Ontario, where cold winters maintain populations at very low levels, except for intermittent local increases (invasions) for a year or two. Widely scattered pairs nest regularly in the Deciduous Forest region, but they can be found on occasion as far north as Georgian Bay, and as far east as Kingston in Frontenac County.

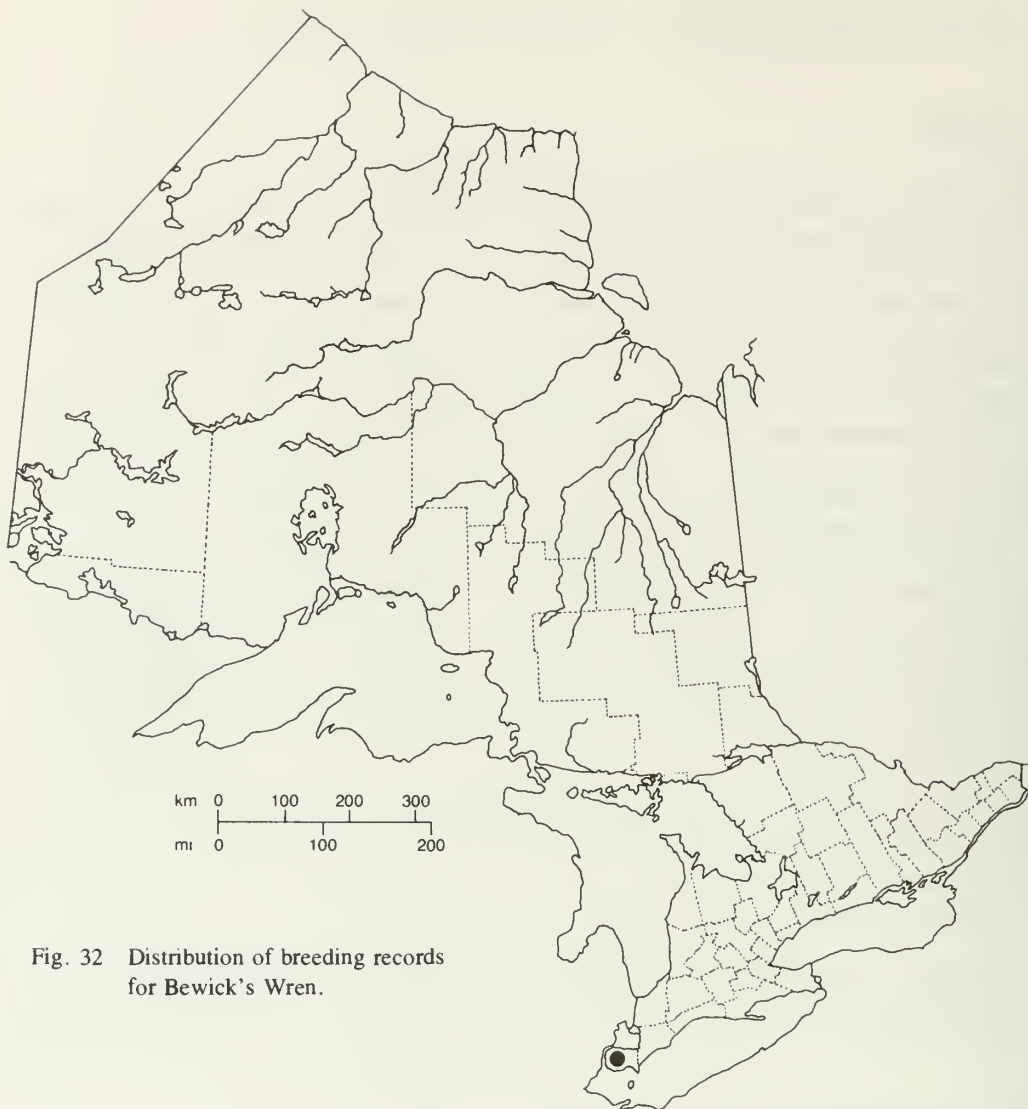


Fig. 32 Distribution of breeding records for Bewick's Wren.

Bewick's Wren, *Thryomanes bewickii* (Audubon)

Nidiology

RECORDS 5 nests representing 1 provincial region.

The Bewick's Wren has nested in extreme southwestern Ontario on 5 occasions in 3 different years. The first nesting was on a beam under a cottage. The 4 subsequent nests were all in the same general location as the first nest. These 4 nests were in open areas in wooded parkland, and were on beams under the eaves of picnic pavilions.

Two of the nests were 1.8 to 2.4 m (6 to 8 ft) above ground, and 1 nest contained grass and leaves.

EGGS 4 nests with 1 to 6 eggs; 1E (1N), 4E (2N), 6E (1N).

INCUBATION PERIOD No information.

EGG DATES 5 nests, 9 May to 24 May (6 dates); 3 nests, 16 May to 18 May.

Breeding Distribution

The Bewick's Wren has been recorded breeding in Ontario only at Point Pelee National Park. It is a widespread species in the U.S.A., but its normal breeding range in eastern North America extends north only as far as southern Lake Erie. Nests were found in the province for the first time in 1950, and subsequently in 1956 and 1957 (Baillie, 1962; Kelley et al., 1963). Apart from these, no other nests have been found. The species certainly does not nest every year in Ontario and may not have nested again since 1957.



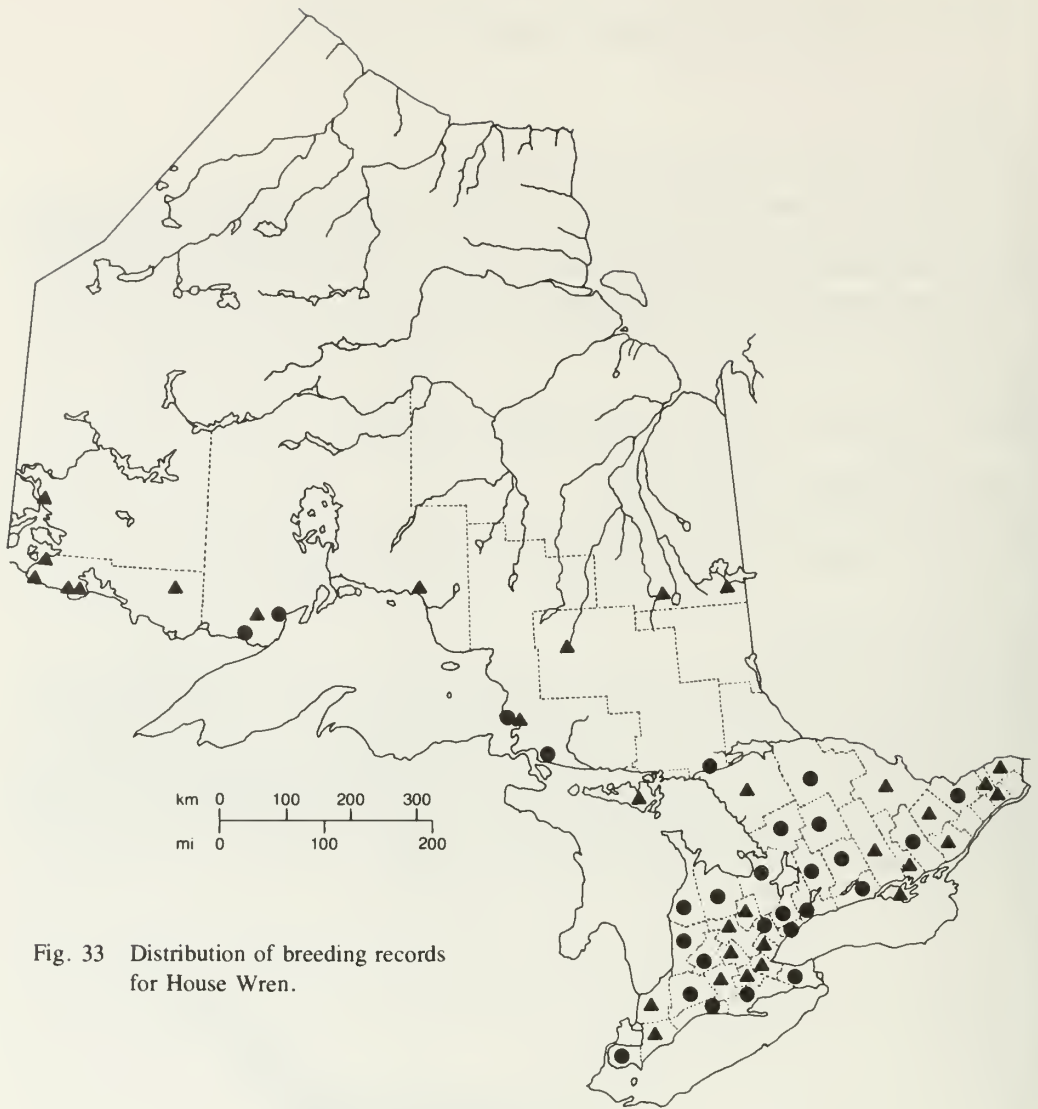


Fig. 33 Distribution of breeding records for House Wren.

House Wren, *Troglodytes aedon* Vieillot

Nidiology

RECORDS 1679 (ca 1747 nests) representing 48 provincial regions.

Based on 257 records, breeding habitats are farmland, including overgrown fields and pastures, orchards, fencerows, young plantations, and limestone savannahs (96 records); woodlands, including swamps, bogs, and beaver ponds (58 records); rural and urban gardens, farmyards, cottage areas, and parkland (57 records); river/lake/pond shorelines and road/railway right-of-ways (35 records); and treed sand dunes (2 records). Either wooded areas were open or nests were at edges of woods or in clearings, and deciduous and mixed

stands were much preferred to coniferous. Dry areas were selected more often than wet, but without apparent significance. Habitats were listed as reported, but categories often overlapped.

Nests were variously located in bird boxes (1049 records); in cavities in trees, stubs, and stumps (180 records); in holes or openings in fence posts, utility poles, and pipes (100 records); in buildings, in holes and recesses and often under eaves (38 records); inside metal cans, tool boxes, kettles, and mail boxes (13 records); in old nests of Barn Swallow (7 records), American Robin (3 records), and Northern Oriole (1 record); and in hanging fabric and paper bags (3 records). Single nests were reported in each of the following locations: under sawdust in an icehouse, under a log pile, on the side of a flagpole float, in a broken light standard, and in the head of a ceramic owl mounted on a post. One nest was in a metal can buried in the ground with only a spout protruding, and another was between 2 robin nests that had been built on top of each other. House Wrens often nested in boxes intended for Eastern Bluebirds, Tree Swallows, Black-capped Chickadees, and Purple Martins, and sometimes did so after the use of the boxes by those species in the same season. One pair nested in a bird box with a robin simultaneously nesting on top of the box. Tree nests were often in natural cavities (159 records) and sometimes in old woodpecker holes (21 records). Tree nests were in dead (122 records) and living (37 records) deciduous (14 spp., 87 records) and coniferous (3 spp., 15 records) trees. Those most frequently selected were birch spp. (19 records), elm spp. (13 records), white cedar (11 records), and apple (9 records). Three nests were on or near the ground with all others elevated. Excluding bird-box nests, heights of 160 tree nests ranged from 0.3 to 23 m (1 to 75 ft), with 80 averaging 1.2 to 3 m (4 to 10 ft); heights of 24 nests in or on buildings ranged from 0.6 to 3.7 m (2 to 12 ft), with 12 averaging 1.8 to 2.7 m (6 to 9 ft).

Nests were bulky cups with deep bowls that varied in size because their accumulated materials tended to fill the cavity or recess. Nest exteriors were almost invariably composed of sticks and twigs, and other components were grasses, feathers, vine tendrils, plant stalks, rootlets, insect and spider cocoons, plastic/paper/foil, string, leaves, pine needles, wool, mosses, bark, and plant down. Linings were of feathers, fine grasses, bark shreds, hair, snake skins, pine needles, plant down, spider webs, twigs, plant stalks, rootlets, and thread. Tree-cavity hole diameters of 5 nests ranged from 3.8 to 5 cm (1.5 to 2 inches); tree-cavity depths of 15 nests ranged from 6.4 to 35.6 cm (2.5 to 14 inches), with 7 averaging 15 to 20 cm (6 to 8 inches); and tree-cavity diameters of 7 nests ranged from 6.4 to 20 cm (2.5 to 8 inches). Nest measurements in boxes were so variable as to be meaningless, but 1 nest in a fence post measured as follows: outside diameter 9.5 cm (3.7 inches), inside diameter 5.5 cm (2.2 inches), outside depth 8 cm (3.1 inches), and inside depth 5 cm (2 inches).

EGGS 283 nests with 1 to 9 eggs; 1E (4N), 2E (11N), 3E (13N), 4E (30N), 5E (46N), 6E (94N), 7E (70N), 8E (14N), 9E (1N).

Average clutch range 6 to 7 eggs (164 nests).

Eggs were usually laid at daily intervals, but at 1 nest there was a 2-day interval between the third and fourth eggs, and at another a 3-day interval between the fourth and fifth eggs.

Cowbird parasitism 1120 nests with 4 parasitized (0.4%).

INCUBATION PERIOD 43 nests, 10 to 19 days, with 21 averaging 12 to 14 days: 1 of 10 to 13 days, 4 of 11 days, 1 of 11 to 13 days, 15 of 12 days, 8 of 13 days, 6 of 14 days, 1 of no more than 14 days, 2 of at least 14 days, 1 of 15 days, 1 of no more than 15 days, 1 of at least 15 days, 1 of 17 days, 1 of 19 days.

The shortest periods together with prolonged hatching times of 2, 3, or more days, suggest

that incubation sometimes commenced before the last egg was laid. The longest periods indicate a delay in the onset of incubation and delays of 6 and 10 days were reported.

EGG DATES 283 nests, 12 May to 1 September (435 dates); 141 nests, 9 June to 1 July. Renestings and double broods were both reported in the same nest. One second brood was produced by a different female, and at another nest second and third renestings were reported.

Breeding Distribution

The House Wren breeds across Ontario as far north as Kenora and Cochrane.

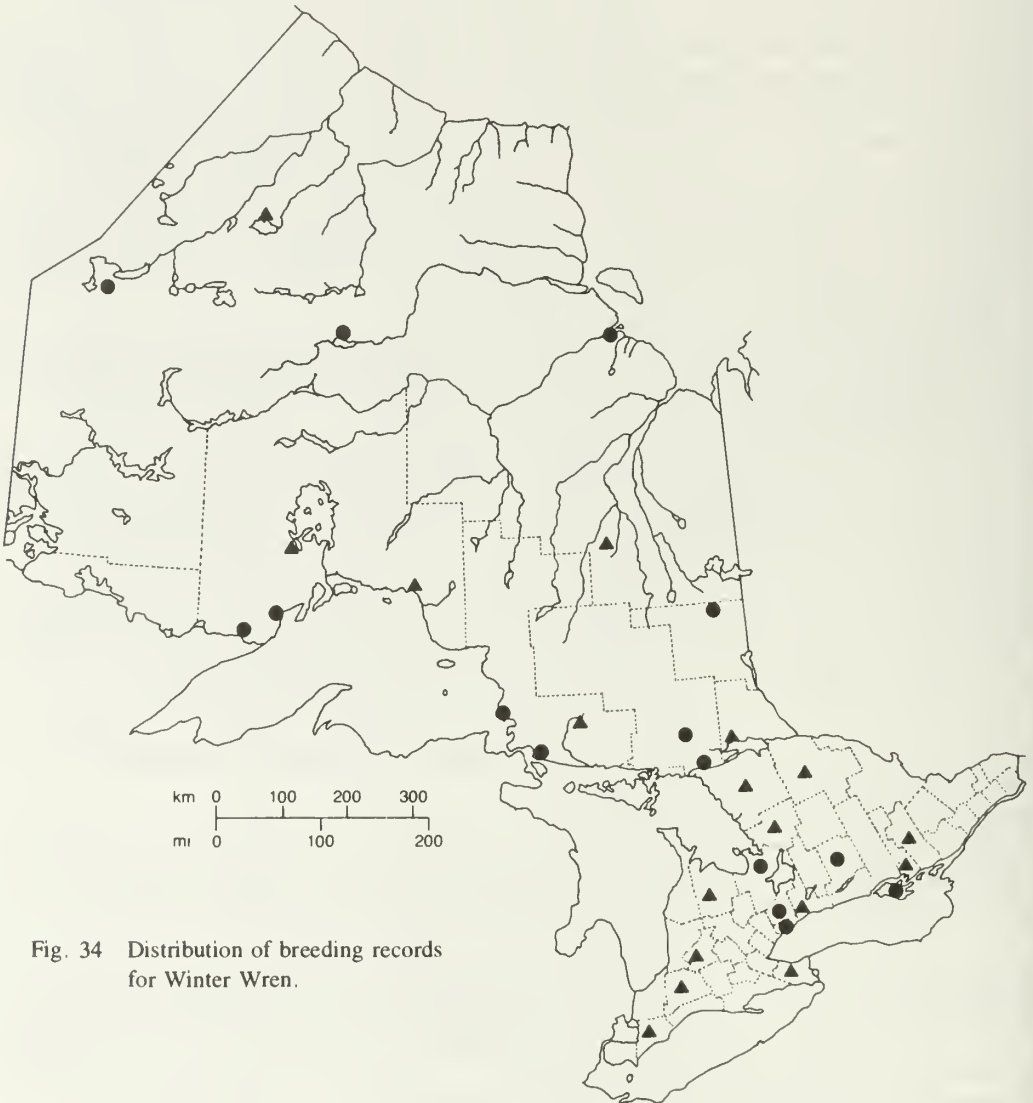


Fig. 34 Distribution of breeding records for Winter Wren.

Winter Wren, *Troglodytes troglodytes* (Linnaeus)

Nidiology

RECORDS 26 nests representing 16 provincial regions.

Breeds in deciduous, mixed, and coniferous woodlands. Breeding habitats were almost always wet, or near bodies of water. Two nests were recorded in bog areas with conifers, and 1 nest was near buildings in a mixed wood.

Nest locations varied, but all were hidden and shaded. Nests were recorded in fallen tree roots (9 nests); in holes in tree stumps (1 was between the loose bark and the trunk) and fallen logs (6 nests); under live birch roots growing under a building (1 nest); under a bank of a ditch (1 nest); in moss on a rock (1 nest); and on a rock ledge (1 nest). One nest was within 90 cm (35 inches) of an active nest of Ovenbird. Heights of 8 nests ranged from 0.08 to 2 m (0.25 to 6.5 ft), with 4 averaging 0.3 to 1.1 m (1 to 3.5 ft).

Nests not built in cavities were domed structures with a circular entrance hole on the side. One nest was built on an old nest of Eastern Phoebe on a ledge, and the phoebe's nest was roofed over and had an entrance hole less than 2.5 cm (1 inch) in diameter on the front of the roof. One nesting cavity was in a stump that had a diameter of 12.7 cm (5 inches), and the depth of another log cavity was 45.7 cm (18 inches). Nests were composed of mosses, twigs, grasses, leaves, plant fibres, bark shreds, and hair. They were lined with feathers and hair. Three nests had outside diameters ranging from 8.5 to 14 cm (3.3 to 5.5 inches), inside diameters from 4 to 4.5 cm (1.6 to 1.8 inches), outside depths from 6.5 to 8 cm (2.6 to 3.1 inches), and inside depths from 3.5 to 5.5 cm (1.4 to 2.2 inches).

EGGS 8 nests with 1 to 6 eggs; 1E (1N), 4E (2N), 5E (3N), 6E (2N).

Average clutch range 5 to 6 eggs (5 nests).

INCUBATION PERIOD No information.

EGG DATES 6 nests, 31 May to 12 July; 3 nests, 2 June to 17 June.

Reports of nest construction early in April and of young being fed in the nest late in August would suggest a broader range of egg dates than the few records indicate.

Breeding Distribution

The Winter Wren breeds throughout Ontario in forested regions. It is scarce or absent in much of the southern agricultural area.

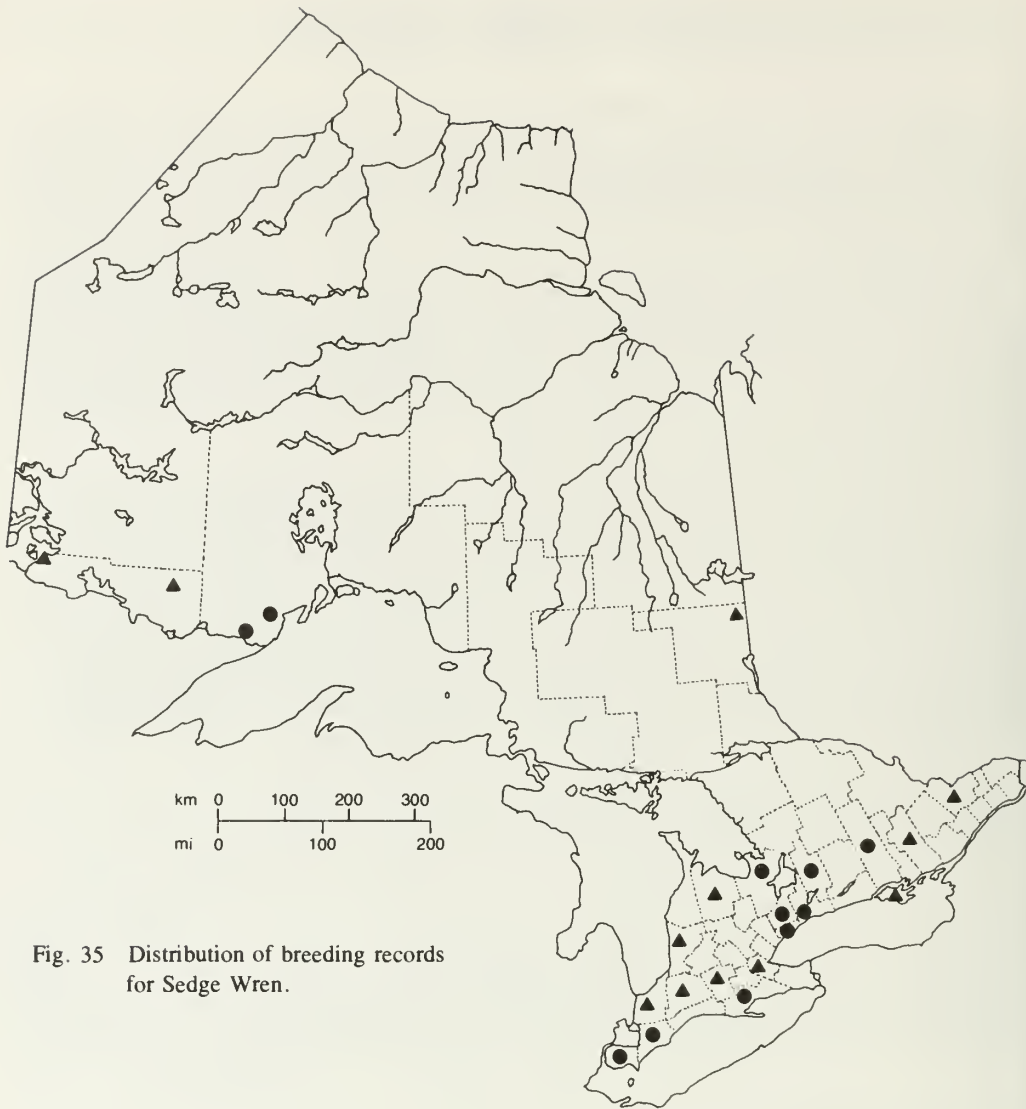


Fig. 35 Distribution of breeding records for Sedge Wren.

Sedge Wren, *Cistothorus platensis* (Latham)

Nidiology

RECORDS 55 (64 nests) representing 20 provincial regions.

Breeds sometimes singly and sometimes in small colonies in both wet (19 nests) and dry (16 nests) areas: in sedge and/or cattail meadows and marshes (17 nests); in uncultivated and cultivated long-grass fields and pastures (15 nests, 2 of which were in strawberry patches); in bogs (2 nests); and in an old, overgrown, wet gravel pit (1 nest). Although, as noted, nest areas were somewhat more often wet than dry, nests were rarely over water. Nest habitats (Fig. 163) were usually open, but scattered trees and shrubs were sometimes present.

Nests were usually located in clumps of upright, dead and living stalks of sedges, various grasses, weeds, and cattails. Two nests were at the bases of small trees, 1 was fastened in the branches of a spiraea bush and some grass stems, and a fourth was noted on the ground at the base of a clump of sedge. Some nests were described as well hidden. Heights of 28 elevated nests ranged from 0.1 to 0.9 m (0.3 to 3 ft), with 14 averaging 0.2 to 0.5 m (0.5 to 1.5 ft).

Nest structures were woven, globular or spherical balls of vegetation, with an entrance hole on 1 side. Five nests had hole diameters ranging from 2 to 2.5 cm (0.8 to 1 inch). Three entrance holes were noted to be facing south, and 1 faced east. Green (living) stalks of supporting vegetation were characteristically woven into the nest structure. Dummy, or male-built, empty nests were frequently reported nearby, 1 of which was at a distance of 3 m (10 ft).

Outer nest materials were blades of sedges, grasses, and occasionally cattail leaves. Nest linings were of feathers and down (duck, pheasant), plant down, fine grasses, leaves, and hair. Nine nests had outside diameters ranging from 8 to 13 cm (3.1 to 5.1 inches), inside diameters from 4.5 to 7 cm (1.8 to 2.8 inches), outside depths from 8 to 13 cm (3.1 to 5.1 inches), and inside depths from 4 to 6.5 cm (1.6 to 2.6 inches).

EGGS 43 nests with 3 to 8 eggs; 3E (2N), 4E (5N), 5E (10N), 6E (9N), 7E (14N), 8E (3N).
Average clutch range 5 to 7 eggs (33 nests).

INCUBATION PERIOD No information.

EGG DATES 37 nests, 5 June to 22 July (41 dates); 19 nests, 13 June to 8 July.

Breeding Distribution

The Sedge Wren (Fig. 164B) breeds throughout southern Ontario, but largely avoids the Canadian Shield. In northern Ontario it breeds as far north as Lake of the Woods and northern Timiskaming District, but breeding localities are few and widely spaced. The species probably breeds considerably farther north especially in the western part of the province.

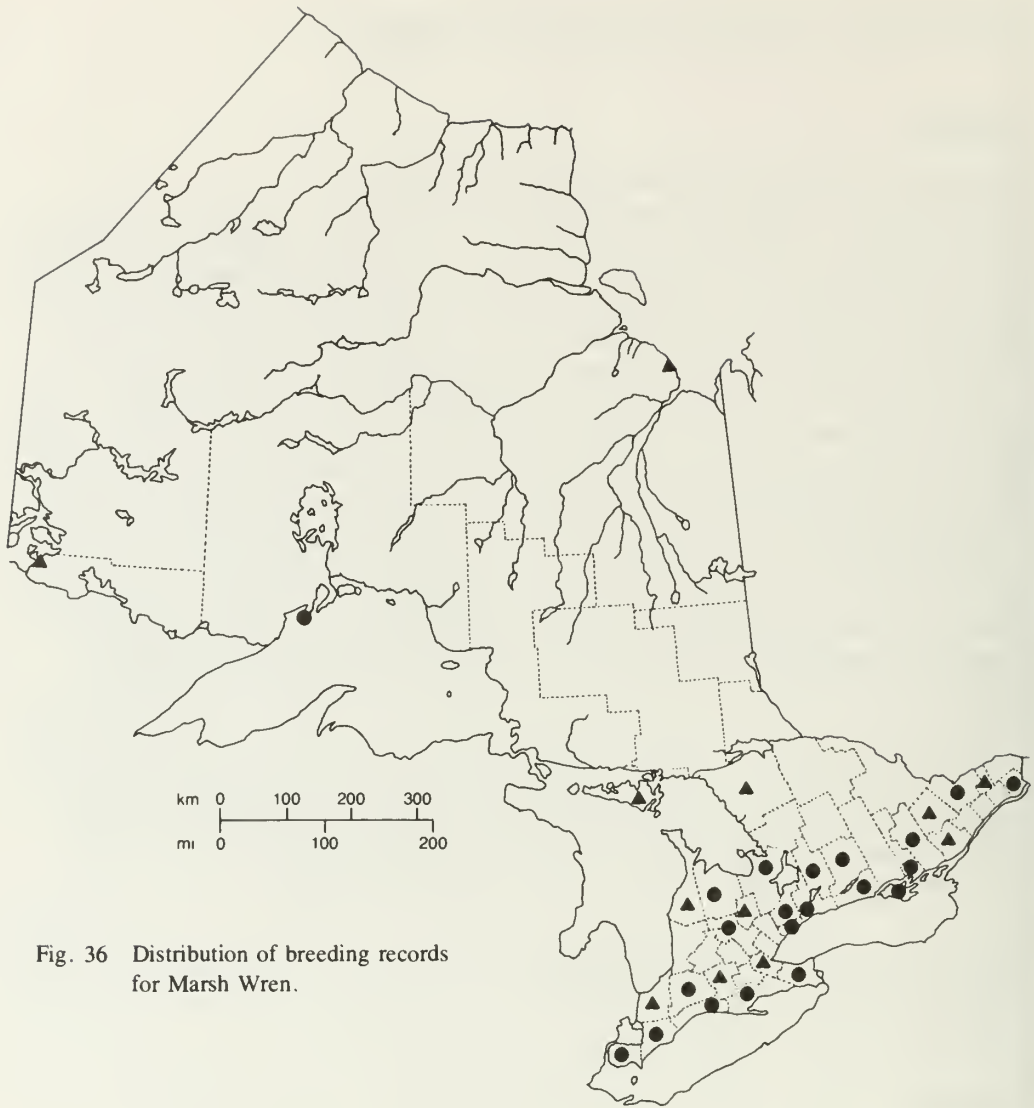


Fig. 36 Distribution of breeding records for Marsh Wren.

Marsh Wren, *Cistothorus palustris* (Wilson)

Nidiology

RECORDS 449 (476 nests) representing 31 provincial regions.

Breeds singly and sometimes in loose colonies, usually in freshwater marshes and marshy borders of lakes, rivers, and ponds: in large and small cattail stands (202 records; Fig. 199); in unspecified marsh growths (82 records); in horsetail stands (37 records); in bulrush, other sedges, and cattail/sedge stands (34 nests); in grassy (often bluejoint and common reed grass) and cattail/reed-grass growths (22 records); in bur-reed and cattail/bur-reed growths (9 records); and in cattail/leatherleaf stands (1 record). Single nests were reported in a willow swale, a wet pasture, and in the spiraea border of a marsh.

Nests were usually situated over water, but sometimes were over damp ground, and 14 nests ranged from beside open water to as far as 91 m (300 ft) distant from it. Nests were elevated most often in cattails (179 records) and less often in bulrushes, grasses, sedges, horsetails, bur-reeds, loosestrife, and bushes of willow and spiraea. The vegetation supporting the nests was usually dead, sometimes a combination of dead and living, and occasionally living. Water depths below 31 nests ranged from 5 to 91 cm (2 to 36 inches). From 1 to 6 dummy, or male-built, empty nests were frequently reported near occupied nests. One record described 5 dummy nests within 12 m (40 ft) of an occupied nest. One active wren's nest had an active nest of Least Bittern built on top of it. Heights of 234 nests ranged from 0.2 to 1.5 m (0.5 to 5 ft), with 117 averaging 0.5 to 0.9 m (1.5 to 3 ft).

Nests were variously described as ball-shaped, globular, spherical, domed, football-shaped, oval, and oblong. Since heights were usually greater than widths, the oblong or oval designations were most accurate. Nest entrances were almost invariably holes in the nests' sides (1 was in the top) and were usually somewhat nearer the top of the nest. Diameters of 2 occupied nest entrances were both 2.5 cm (1 inch), and the diameters of several dummy nest entrances were reported to be 3.8 cm (1.5 inches). Nest exteriors were woven usually of dead (occasionally living) blades and pieces of cattails, sedges, grasses, bulrushes, and bur-reeds. Also included at times were other plant stalks, cattail down, leaves, mosses, mud, and flagging tape. Linings were characteristically formed of cattail down and feathers. Less often linings contained other plant down, fine grasses, shredded cattail pieces, mud, and mouse fur. Ten nests had outside diameters ranging from 9.5 to 13 cm (3.7 to 5.1 inches), inside diameters (front to back) from 4 to 7 cm (1.6 to 2.8 inches), outside depths from 10 to 17 cm (3.9 to 6.7 inches), and inside depths (entrance hole to bottom) from 3 to 6.5 cm (1.2 to 2.6 inches).

EGGS 332 nests with 1 to 9 eggs; 1E (16N), 2E (23N), 3E (35N), 4E (47N), 5E (101N), 6E (100N), 7E (7N), 8E (1N), 9E (2N).

Average clutch range 5 to 6 eggs (201 nests).

INCUBATION PERIOD 2 nests: 1 of at least 13 days, 1 of ca 15 days.

EGG DATES 332 nests, 9 May to 15 August (345 dates); 166 nests, 6 June to 21 June. Renestings were reported, and the long period of egg dates strongly suggests double and possibly even triple broods.

Breeding Distribution

While the Marsh Wren can be found throughout southern Ontario, it is almost totally absent from the Canadian Shield. It is known to nest in northern Ontario in only a few places between Lake Superior and Lake of the Woods. A nest with young was discovered on 9 July 1983 near North Point on James Bay, Cochrane District, suggesting other undiscovered colonies in northern Ontario east of Lake Superior.

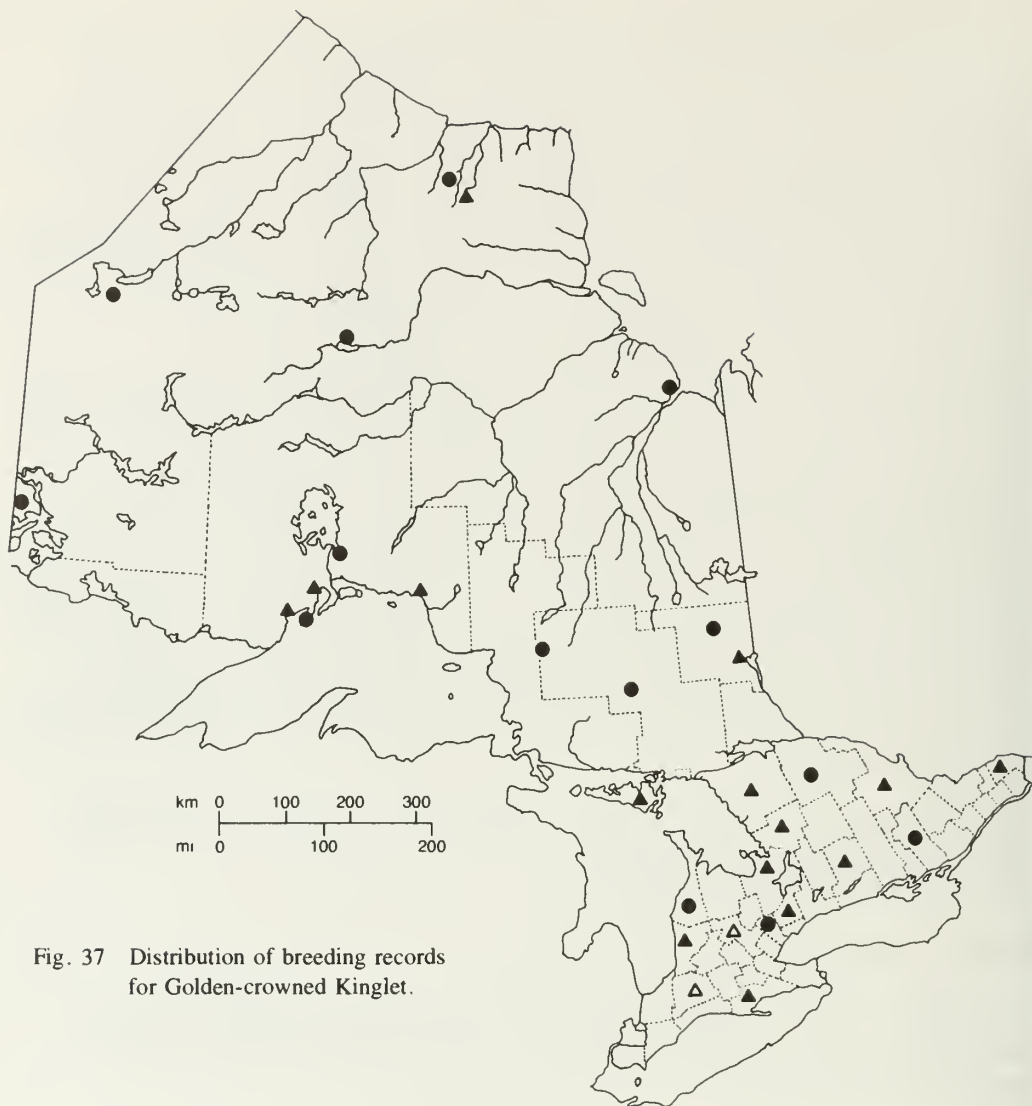


Fig. 37 Distribution of breeding records for Golden-crowned Kinglet.

Golden-crowned Kinglet, *Regulus satrapa* Lichtenstein

Nidiology

RECORDS 9 nests representing 7 provincial regions.

Breeds in usually dense stands of large coniferous trees; nest sites were in closed areas, at clearing edges, or near water.

Nests were invariably in living coniferous trees: spruce spp. (6 nests) and hemlock (1 nest). Two nests were positioned within 1 m (3.3 ft) of the top of the tree. They were characteristically suspended from horizontal branches or forks and secured by smaller, drooping branches. They were well concealed, and variously placed against the main trunk and as far distant as 4 m (13 ft). Heights of 6 nests ranged from 2.4 to 13 m (8 to 43 ft), with 3 averaging 8.5 to 12 m (28 to 40 ft).

Nests were large, flat-topped spheres or ovals with narrowed openings at the top, thick walls, and deep inner cavities. Their exteriors were mainly composed of green mosses, with the occasional addition of feathers, lichens, plant fibres, grass stalks, and bark strips. Linings were often mainly of feathers, but in 2 nests none were included. Other lining materials were grasses, mosses, fine rootlets, plant stalks, conifer needles, animal hair, and once a piece of a paper wasp nest. Four nests had outside diameters ranging from 9 to 10 cm (3.5 to 4 inches), inside diameters from 4.5 to 7 cm (1.8 to 2.8 inches), outside depths from 7 to 9.5 cm (2.8 to 3.7 inches), and inside depths of 4.5 to 7 cm (1.8 to 2.8 inches).

EGGS 3 nests with 5 to 9 eggs; **5E** (2N), **9E** (1N).

INCUBATION PERIOD No information.

EGG DATES 1 record, 30 May.

Breeding Distribution

The Golden-crowned Kinglet breeds throughout Ontario where coniferous forests are found. It becomes very thinly distributed north of Big Trout Lake and Fort Albany, or south of Algonquin Park. Only isolated nestings have been reported in southern agricultural areas where significantly sized patches of coniferous trees occur.



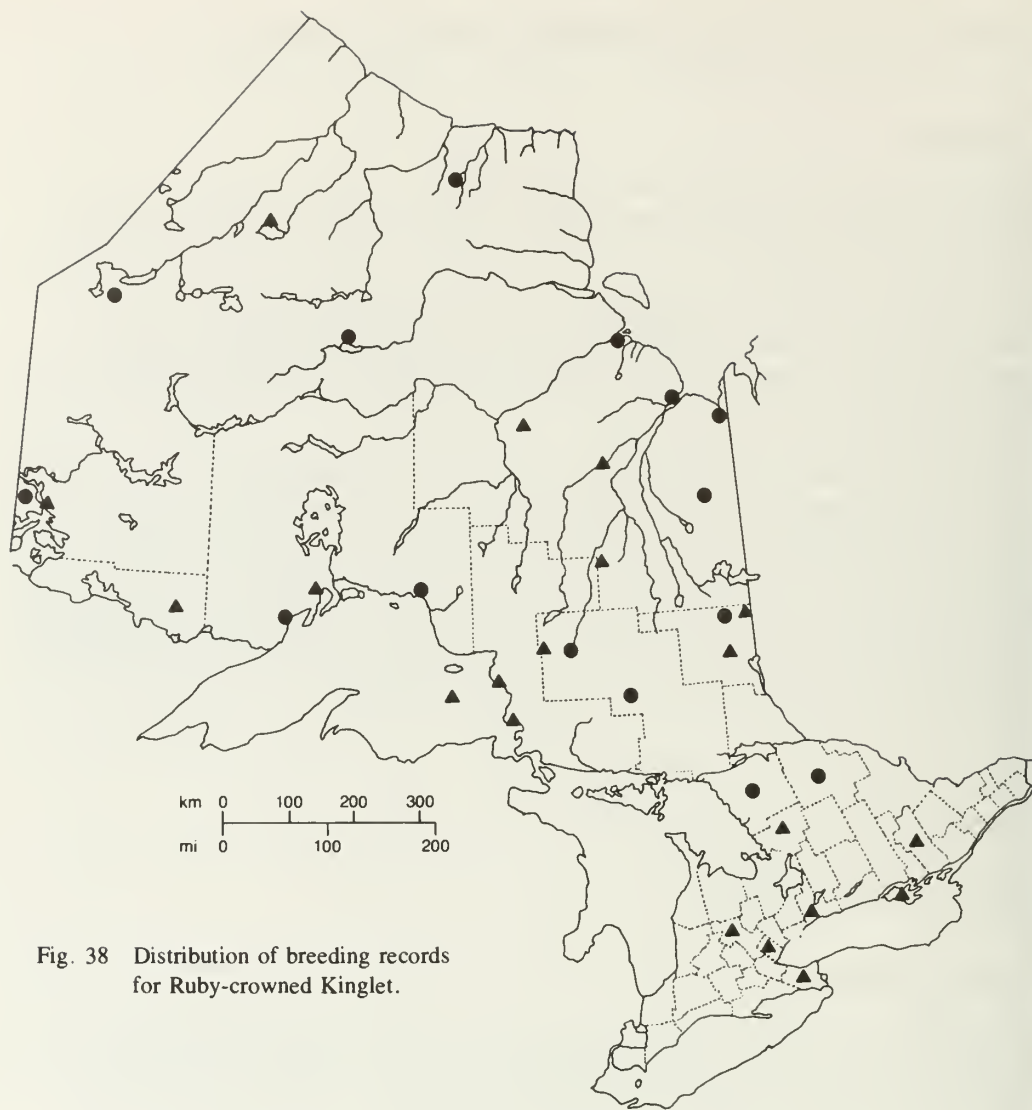


Fig. 38 Distribution of breeding records for Ruby-crowned Kinglet.

Ruby-crowned Kinglet, *Regulus calendula* (Linnaeus)

Nidiology

RECORDS 21 nests representing 12 provincial regions.

Breeds usually in open black spruce (Fig. 153) and black spruce/tamarack muskegs; and occasionally in mixed woods (1 nest), edge of burn (1 nest), open jack pine stand (1 nest), and an isolated tree near a beaver meadow (1 nest). Breeding habitats were characteristically open, and were either wet or near water.

Nests (Fig. 154B) were invariably in living conifers: spruce spp. (18 nests) and jack pine (1 nest). Nests, like those of the Golden-crowned Kinglet, were suspended from horizontal or drooping lateral branches or forks, and were supported by smaller twigs. They were positioned either against the trunk (7 nests), or away from it at distances of 0.9 to 3 m (3 to 10 ft), often at the ends of branches (10 nests). They were well concealed and 3 were placed 0.9 to 1.2 m (3 to 4 ft) from the top of the tree. One nest was at the very top of a small black spruce 1.3 m (4.3 ft) in height. Heights of 18 nests ranged from 1.3 to 12 m (4.3 to 39 ft), with 9 averaging 2.7 to 7 m (9 to 23 ft).

Nests were relatively large, deep, globular structures with a narrowed entrance at the top. Exteriors were either entirely formed of mosses, or of mosses with added feathers, lichens, spider webs, bark pieces, hair, twigs, grasses, and conifer needles. Nest linings were usually of feathers, with the occasional addition of fine grasses, plant down, and lichens. In 2 nests the linings contained rabbit fur and no feathers. Nine nests had outside diameters ranging from 6 to 10 cm (2.4 to 4 inches), inside diameters from 3.5 to 4.5 cm (1.4 to 1.8 inches), outside depths from 6.5 to 10 cm (2.6 to 4 inches), and inside depths from 3 to 5 cm (1.2 to 2 inches).

EGGS 15 nests with 6 to 10 eggs; **6E** (2N), **7E** (2N), **8E** (5N), **9E** (4N), **10E** (2N).

Average clutch range 8 to 9 eggs (9 nests).

INCUBATION PERIOD 2 nests: 1 of 13 days, 1 of ca 14 days.

EGG DATES 13 nests, 2 June to 23 June (18 dates); 6 nests, 10 June to 14 June.

Breeding Distribution

The Ruby-crowned Kinglet breeds throughout northern Ontario where coniferous forests are found. In southern Ontario it is common only at the latitude of Algonquin Park, and although isolated records extend as far south as Niagara RM, it breeds infrequently south of the Canadian Shield.

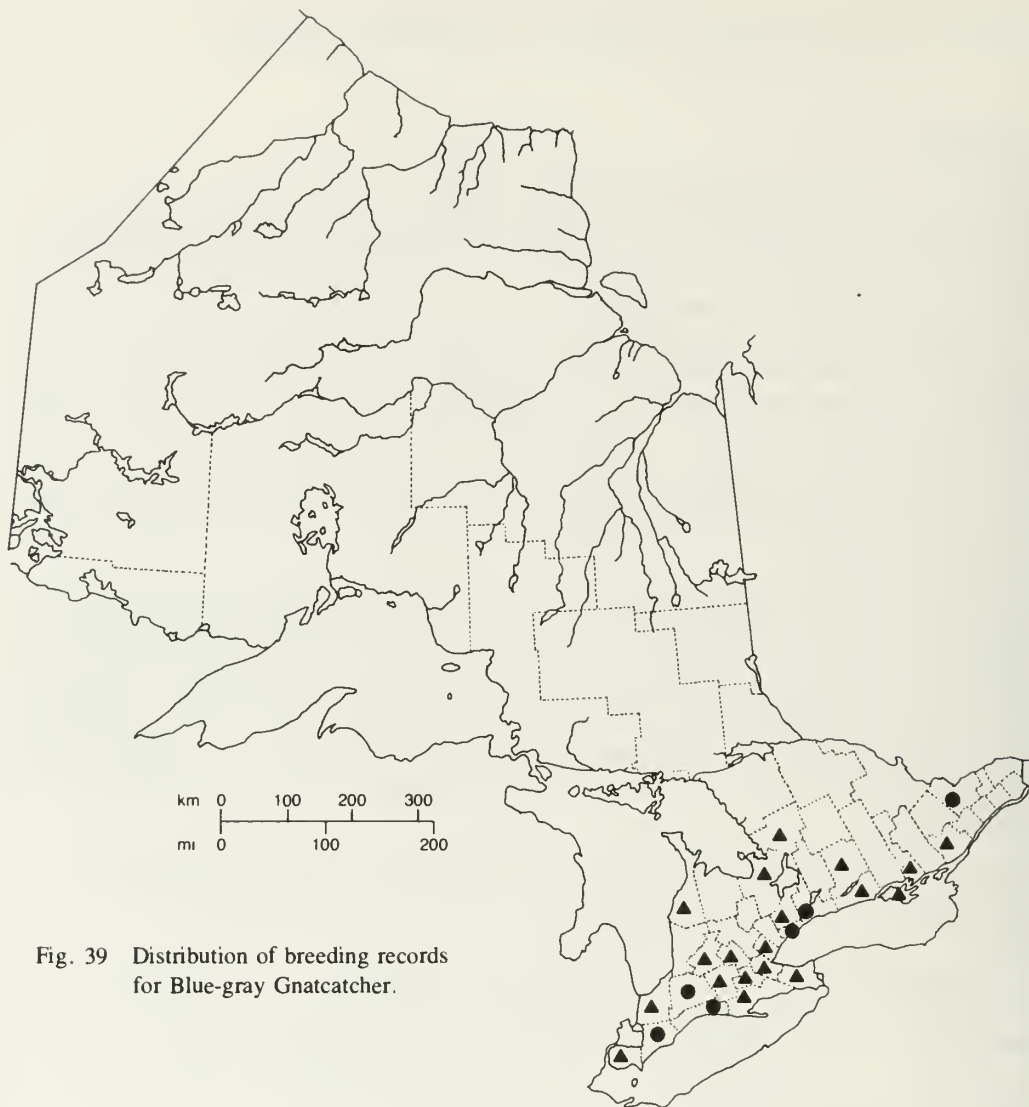


Fig. 39 Distribution of breeding records for Blue-gray Gnatcatcher.

Blue-gray Gnatcatcher, *Polioptila caerulea* (Linnaeus)

Nidiology

RECORDS 88 nests representing 24 provincial regions.

A breeding bird of southern woodlands (Fig. 195), the Blue-gray Gnatcatcher nests most often in deciduous (24 nests) and mixed (12 nests) woods, and less often in riverbank groves (4 nests), shrubby fields (2 nests), and a swale (1 nest). Both wet and dry habitats were recorded without a discernible preference being apparent. Open areas near nests such as paths, roads, clearings, streams, and lakes were frequently reported (18 nests).

Nests were in trees (66 nests) and vines (2 nests), and deciduous species (15 spp., 64 nests) were greatly preferred to coniferous (3 spp., 4 nests). Nest trees were usually living, but 1 was dead. The tree species selected most commonly were oak spp. (15 nests), ash spp. (9 nests), maple spp. (8 nests), and birch spp. (8 nests). Nests were usually saddled on horizontal or near-horizontal limbs (36 nests), and less often were in crotches (20 nests). Eight nests were at knots, branch junctions, and vertical branches, or were under overhead branches or leafy twigs. Supporting limbs of 7 nests were noted to be dead. Nest limbs ranged in diameter from 2.2 to 7.6 cm (0.9 to 3 inches). Eight nests were situated away from the trunk (1 nest at trunk) at distances varying from 0.1 to 3 m (0.3 to 10 ft), with 4 averaging 1.8 to 2.7 m (6 to 9 ft). Heights of 73 nests ranged from 0.6 to 26 m (2 to 85 ft), with 37 averaging 6.7 to 12 m (22 to 40 ft).

Nests (Fig. 196A) were beautifully formed, soft, round, deep cups, narrowing noticeably at the rim. They were composed of plant down and woven plant fibres, fine grasses, hair, spider webs, seeds and scales, feathers, weed stems, bits of vegetation, lichens, buds, pine needles, and bark fibres. Green and blue-gray lichens invariably camouflaged the exterior. Nests were lined with plant down. Four nests had outside diameters ranging from 6.4 to 7.6 cm (2.5 to 3 inches); 3 nests had inside diameters ranging from 3 to 4.5 cm (1.2 to 1.8 inches); 4 nests had outside depths ranging from 5 to 7.6 cm (2 to 3 inches); 3 nests had inside depths ranging from 3.6 to 4.4 cm (1.4 to 1.7 inches).

EGGS 19 nests with 3 to 5 eggs; 3E (5N), 4E (7N), 5E (7N).

Average clutch range 4 to 5 eggs (14 nests).

Cowbird parasitism 22 nests with 4 parasitized (18.2%) (Fig. 203).

INCUBATION PERIOD 1 nest, 12 days.

EGG DATES 22 nests, 19 May to 1 July (25 dates); 11 nests, 28 May to 10 June.

Breeding Distribution

Found primarily in the Deciduous Forest region, the Blue-gray Gnatcatcher breeds farther north in a few scattered localities to Bruce County, Muskoka DM, and Ottawa-Carleton RM.

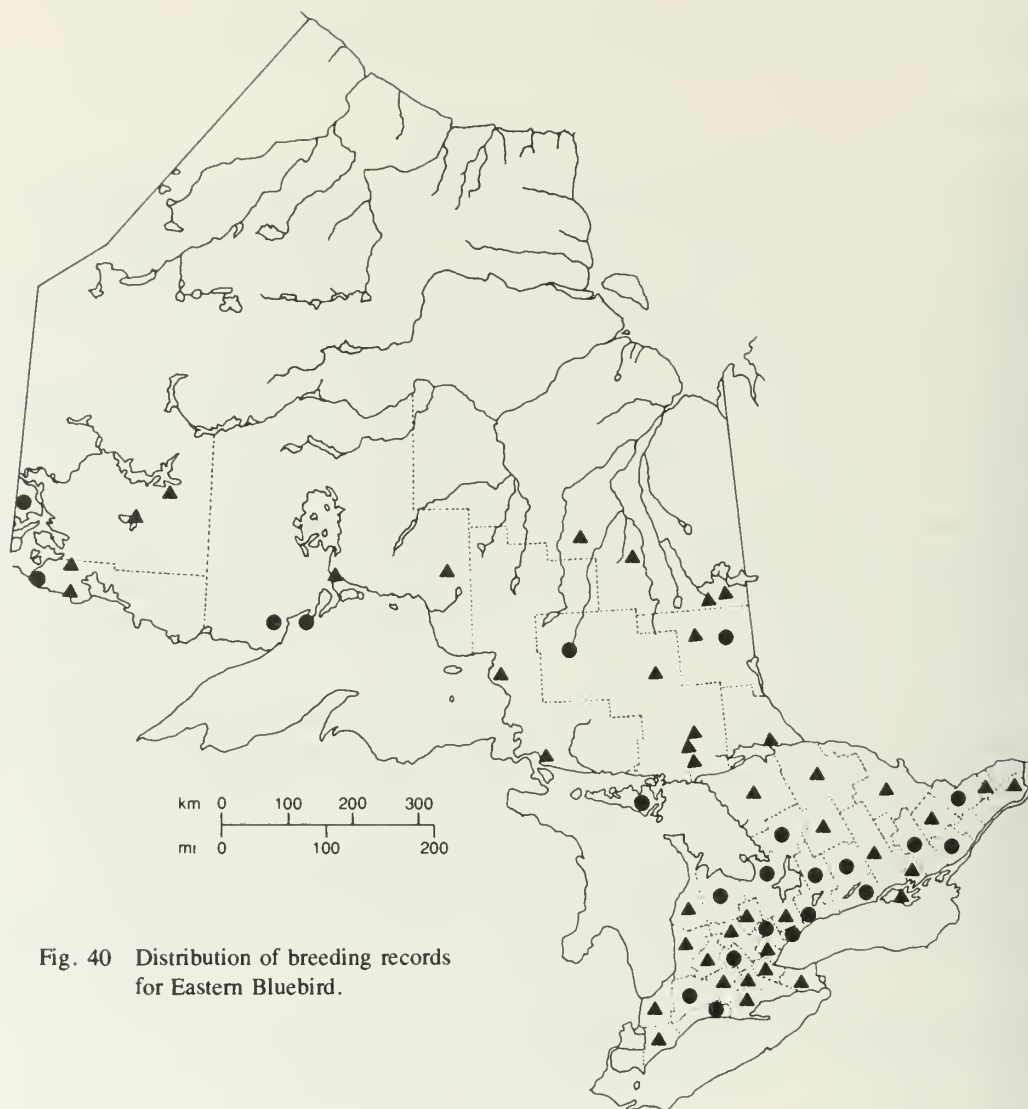


Fig. 40 Distribution of breeding records for Eastern Bluebird.

Eastern Bluebird, *Sialia sialis* (Linnaeus)

Nidiology

RECORDS 3507 (ca 3799 nests) representing 46 provincial regions.

Breeds usually in open country or at edges and clearings of open woodlands, and in the last half century nest-box locations are increasingly influencing habitat selection. The first occupied bluebird box of record in Ontario was reported in 1921 in York County.

Breeding habitats were farmland—including fencerows by pastures, fields, willow swales, and orchards—and stone quarries (97 nests); woodlands, including swamps, burns, and slashes (19 nests); road and railway right-of-ways (16 nests); and beaver ponds and marsh edges (2 nests). One nest was in a sand-dune area and another was in a Cliff Swallow nest

attached to a rural schoolhouse. Habitats were listed as described, but categories often overlapped.

Nests were elevated in bird boxes (1483 nests); in cavities in fence posts (134 nests); in natural and woodpecker cavities in stumps, in dead and occasionally in living trees, and in trunk and branch stubs (131 nests); in cavities in utility poles (19 nests); and in unspecified cavities (5 nests). One previously mentioned nest was in an old nest of Cliff Swallow and another nest was in a hollow of an upright well-pump, which had a misplaced cap. Bluebirds have contested nest sites with, and/or nested near, Northern Flickers, Great Crested Flycatchers, Purple Martins, Tree Swallows, Cliff Swallows, Black-capped Chickadees, House Wrens, European Starlings, and House Sparrows. In 1 fence-post site an Eastern Bluebird nest and a Northern Flicker nest were in cavities on opposite sides and a Great Crested Flycatcher was nesting in the hollow top. Heights of 97 nests in natural sites ranged from 0.6 to 18 m (2 to 60 ft), with 49 averaging 1.4 to 3.7 m (4.5 to 12 ft).

Nest shapes were influenced by cavity shapes and sizes. Nests in bird boxes usually were relatively flat cups with shallow bowls, although a few were described as large balls with deep bowls. Nests were sometimes built over old nests, and 1 report described a double nest with 1 nest on top of the other and with eggs in each. Nests were characteristically formed of grasses to which were sometimes added plant stalks, pine needles, feathers, horse hair, leaves, sticks, and corn husks. Linings, if differentiated, were of fine grasses, feathers, and hair. Two nests were composed entirely of pine needles. One hundred nests in bird boxes had outside diameters ranging from 12.5 to 12.9 cm (4.9 to 5.1 inches), inside diameters from 5 to 9 cm (2 to 3.5 inches), outside depths from 10 to 15.5 cm (4 to 6.1 inches), and inside depths from 3 to 10 cm (1.2 to 4 inches). Depths of 12 natural cavities ranged from 7.6 to 30.5 cm (3 to 12 inches), with 6 averaging 10 to 20 cm (4 to 8 inches). Hole diameters of 5 natural cavities ranged from 2.5 to 20 cm (1 to 8 inches).

EGGS 343 nests with 1 to 8 eggs; 1E (12N), 2E (9N), 3E (30N), 4E (107N), 5E (158N), 6E (24N), 7E (2N), 8E (1N).

Average clutch range 4 to 5 eggs (265 nests).

Eggs were usually laid at daily intervals. At least 4 clutches with 2 eggs were incubated and produced young. Second and third clutches averaged smaller, and in a total of 44 of these, 25 contained 4 or fewer eggs. All August and September clutches contained 3 to 4 eggs.

Cowbird parasitism 3167 nests with 4 parasitized (0.1%).

INCUBATION PERIOD 41 nests, 10 to 15 days, with 21 averaging 13 to 14 days: 1 of no more than 10 days, 5 of 12 days, 12 of 13 days, 2 of ca 13 days, 3 of at least 13 days, 10 of 14 days, 2 of ca 14 days, 2 of at least 14 days, 3 of 15 days, 1 of at least 15 days.

One nest was noted to take 17 days to hatch, another 19 days, and a third at least 21 days; such long periods undoubtedly indicated delays in the onset of incubation. The shortest incubation period (no more than 10 days) together with 2 reports of hatching times longer than 24 hours suggest that occasionally incubation may commence before the laying of the last egg.

EGG DATES 341 nests, 10 April to 2 September (499 dates); 171 nests, 21 May to 21 June. The earliest egg date (10 April) was from an Elgin County nest. Renestings were frequently reported in the same and in different nests; 2 records each described 3 renestings in each of 2 boxes. Double broods were often reported, usually, but not always, in the same nest box. Four triple broods were reported. The interval between fledging and the start of another clutch was usually ca 2 weeks, but ranged from 6 to 23 days. The last of 4 nestings in 1 box was reported to be in October, and the nest was abandoned.

Breeding Distribution

Although much more numerous earlier in this century, the Eastern Bluebird (Fig. 175) can still be found throughout most of its former range in the agricultural and forest-cleared areas in the southern half of the province. Summer records occur as far north as Favourable Lake and Moosonee, but bluebirds are unlikely to be seen north of Lac Seul or Kapuskasing and are now rather locally distributed. Some extensive nest-box projects in southern Ontario have resulted in local increases in population densities.

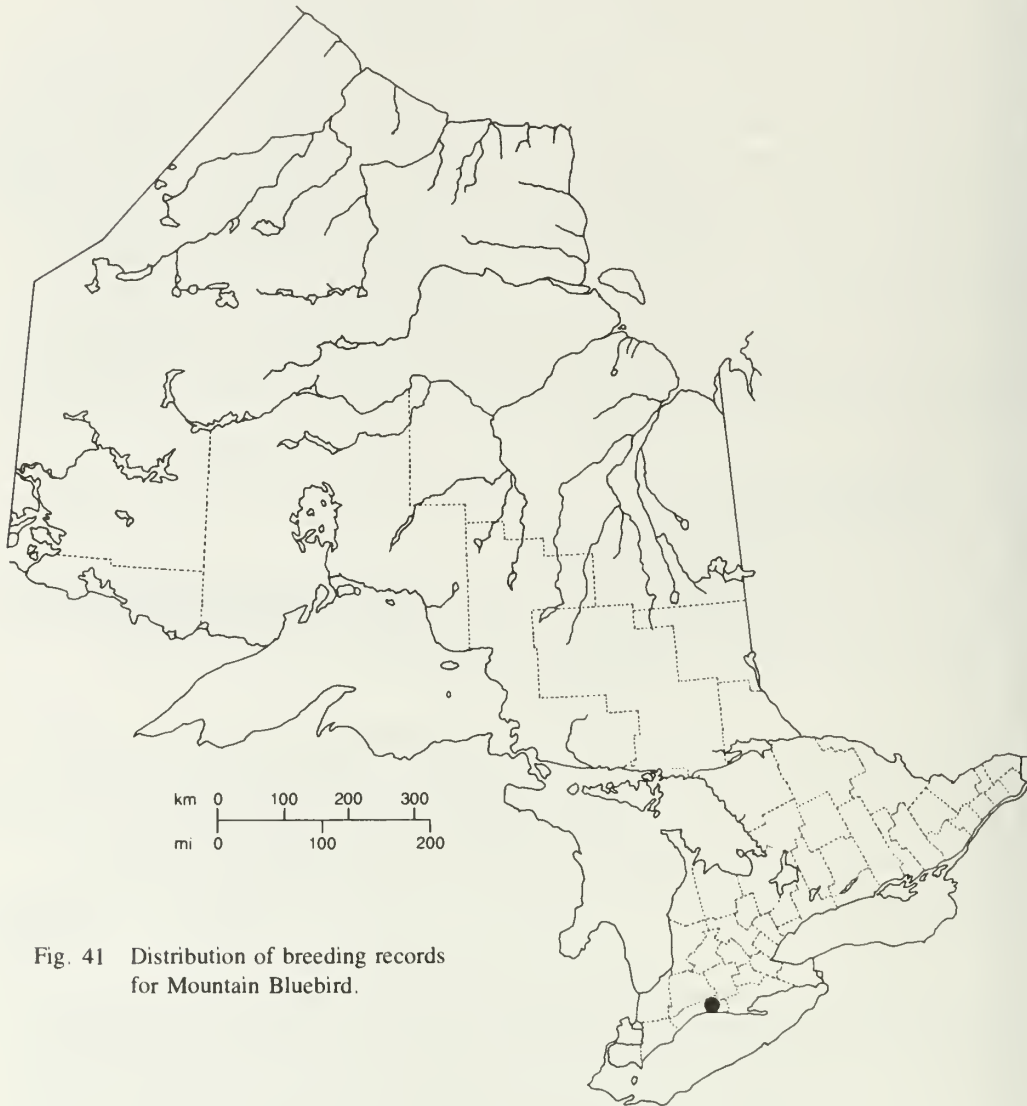


Fig. 41 Distribution of breeding records for Mountain Bluebird.

Mountain Bluebird, *Sialia currucoides* (Bechstein)

Nidiology

RECORDS 1 nest representing 1 provincial region.

On 1 May 1985 a nest in a bluebird box near Port Stanley, in Elgin County, was found being attended by an apparent male Mountain Bluebird and a female Eastern Bluebird (ROM PR 1537-1539; 1691-1692). This nest contained 8 eggs on 9 May, of which only 3 hatched and fledged successfully.

Again in 1986 a male appeared in the same area as in 1985 and mated with an Eastern Bluebird female; the pair had 2 eggs in a nest box by 29 April.

Breeding Distribution

Prior to 1985 we had fewer than a dozen reports of the occurrence of this western species in the province. The reports came from western Ontario (Atikokan and Thunder Bay) and from southern Ontario, mainly Point Pelee. The above described nests are the only reports of nesting by this species in the province.

The photographs we have from 1985 indicated that the bird had some rusty feathers on the breast and that the underside was whiter than that of a typical Mountain Bluebird. However, the whiteness may have resulted largely from film-colour reproduction. The bird certainly did not resemble hybrid Mountain \times Eastern Bluebirds as described by Lane (1969), although some suggested it may have had some hybrid characteristics. The bird that appeared in 1986, possibly the same individual, had no rusty feathers on the breast (J. Hurst, pers. comm.).



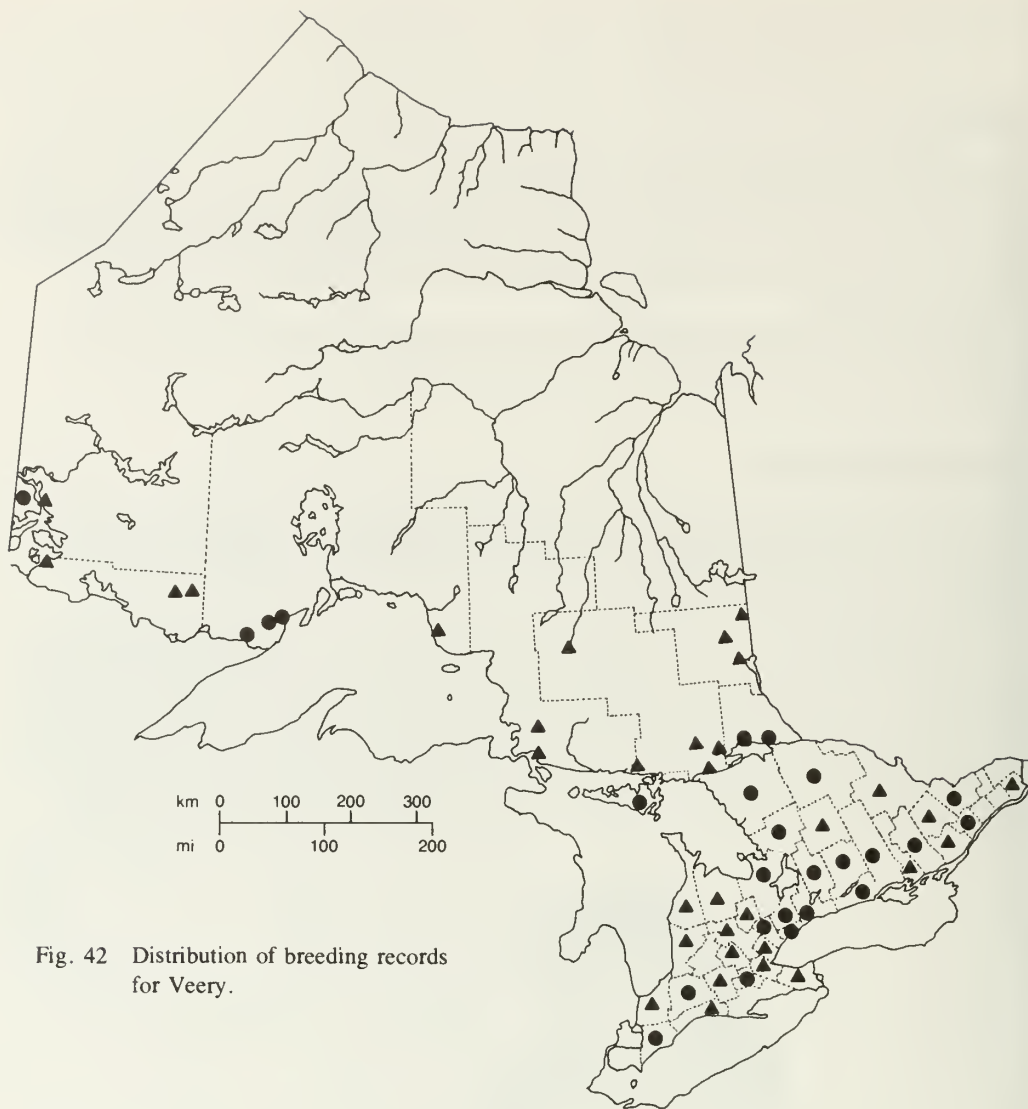


Fig. 42 Distribution of breeding records for Veery.

Veery, *Catharus fuscescens* (Stephens)

Nidiology

RECORDS 376 nests representing 41 provincial regions.

Usually breeds in woodlands; mixed (80 nests) and deciduous (66 nests) woods are selected much more often than coniferous woods (13 nests). Four nests were reported in overgrown fields, and 1 of these was near a woodland edge. Most wooded areas were second growth and were characteristically open, but had a heavy understory or dense ground cover. A number of nest sites (63) were at woodland borders near roads, shorelines, clearings, and fields.

Breeding habitats were much more often wet than dry.

Nests were both elevated (179 nests) and placed on the ground (111 nests). Locations of nests were extremely variable: elevated in or situated at the bases of shrubs, saplings, and trees (149 nests); on, in, or at the bases of stumps (37 nests); among herbaceous plants and in grass clumps (23 nests); on, under, or beside fallen trees, logs, and branches (21 nests); on or under brush and debris (8 nests); and on mossy hummocks (4 nests). Those nests that were elevated in trees and shrubs indicated a preference for deciduous (18 spp., 63 nests) over coniferous (6 spp., 45 nests) species. Those species most frequently selected were balsam fir (14 nests), maple spp. (11 nests), alder spp. (10 nests), spruce spp. (9 nests), and birch spp. (8 nests). Eleven nests were reported in crotches of trees and shrubs. Heights of 165 nests ranged from 0.08 to 5.2 m (0.25 to 17 ft), with 83 averaging 0.2 to 0.6 m (0.8 to 2 ft).

Nests were deep, bulky cups with rough exteriors characteristically composed of leaves, grass, and bark strips, and to which were variously added plant stalks, twigs, rootlets, mosses, pine needles, wood chips, paper, and mud. Linings were of leaves, rootlets, fine grasses, bark strips, pine needles, fine plant stalks, hair, leaf petioles, tendrils, fine twigs, and maple keys. Nine nests had outside diameters ranging from 8.2 to 15.5 cm (3.2 to 6.1 inches), inside diameters from 6 to 7.5 cm (2.4 to 3 inches), outside depths from 9 to 14.6 cm (3.5 to 5.7 inches), and inside depths from 3.4 to 6 cm (1.3 to 2.4 inches).

EGGS 211 nests with 1 to 5 eggs; **1E** (8N), **2E** (15N), **3E** (71N), **4E** (111N), **5E** (6N).

Average clutch range 4 eggs (111 nests).

One nest contained 3 runt eggs without yolks, and another contained a single runt egg.

Cowbird parasitism 368 nests with 70 parasitized (19%).

INCUBATION PERIOD 8 nests (all from Nipissing District); 1 of 10 days, 2 of 11 days, 2 of not more than 11 days, 2 of 12 days, 1 of not more than 14 days.

EGG DATES 270 nests, 3 May to 17 July (289 dates); 135 nests, 5 June to 19 June.

The possibility of double broods was suggested but none were reported.

Breeding Distribution

The Veery breeds across the province north to about Sioux Lookout and northern Timiskaming District.

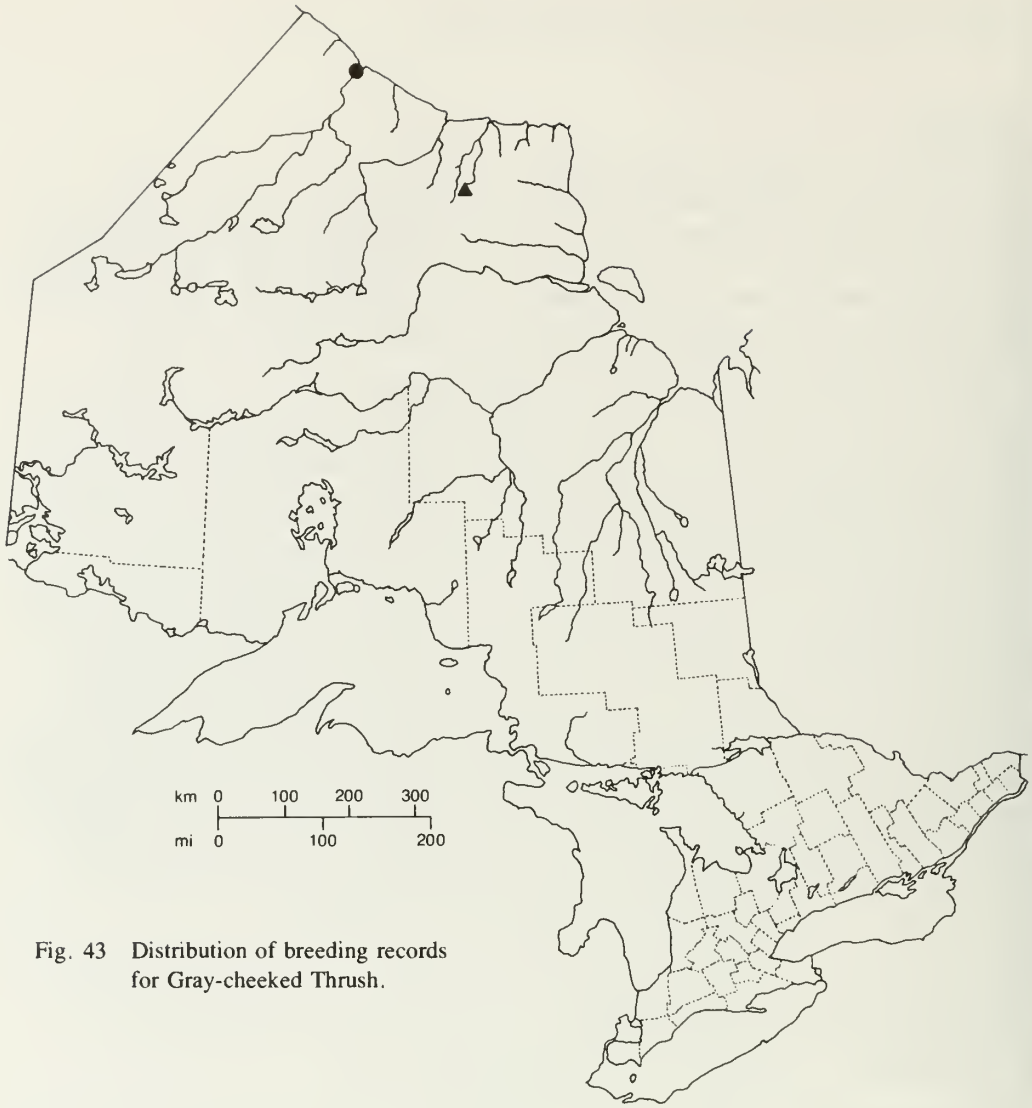


Fig. 43 Distribution of breeding records for Gray-cheeked Thrush.

Gray-cheeked Thrush, *Catharus minimus* (Lafresnaye)

Nidiology

RECORDS 2 nests representing 1 provincial region.

Only 2 nests of the Gray-cheeked Thrush have been reported in the province to date; both were in extreme northern Ontario and they were separated by 24 years.

The first nest, found on 2 July 1940, was in an area of stunted willows and was positioned at the base of a willow, 20 cm (8 inches) above ground. It had an exterior of weed stalks and twigs, and was neatly lined with fine grasses. The nest had an outside diameter of 12 cm (4.7 inches), inside diameter of 7 cm (2.8 inches), outside depth of 7 cm (2.8 inches), and inside depth of 4.5 cm (1.8 inches). It contained 3 slightly incubated eggs (ROM 3903).

The second nest, found on 6 July 1964, was in a dense spruce/alder/willow bog with sphagnum moss underfoot and with a few areas of open water. The nest was at a height of 1.5 m (5 ft) in a 3 m (10 ft) spruce. It had a deep cup, was composed of dead weeds, and was lined with fine dead grasses and a little moss. It contained 3 recently hatched young.

Breeding Distribution

The Gray-cheeked Thrush (Fig. 150A) breeds across Canada generally at more northerly latitudes than in Ontario. The western populations extend into the extreme northwest of the province, but because there are so few summer records we have only an incomplete outline of its range. The first nesting and breeding records were secured at Fort Severn in 1940 (Baillie, 1961), where the species was present in considerable numbers. A few individuals have been seen as far east as Winisk, and at Aquatuk Lake in the Sutton Ridges where the second nest record was obtained (Schueler et al., 1974). None were seen in the Ridges at Aquatuk Lake in 1980 (Dick, J. A., S. V. Nash, and B. E. Tomlinson, 1980, Abundance and Natural History of Birds at Aquatuk Lake, unpubl. ms. in ROM Library), or at Kiruna Lake, 80 km southeast of Winisk, in 1981 (James, R. D., S. V. Nash, and M. K. Peck, 1982, Distribution, Abundance and Natural History of Birds at Kiruna Lake, unpubl. ms. in ROM Library). Thus, the Gray-cheeked Thrush probably breeds mainly in the northwest within a relatively short distance of the Hudson Bay coast, regularly at least as far east as Fort Severn, and with perhaps fewer and more isolated populations east to Winisk and the Sutton Ridges.



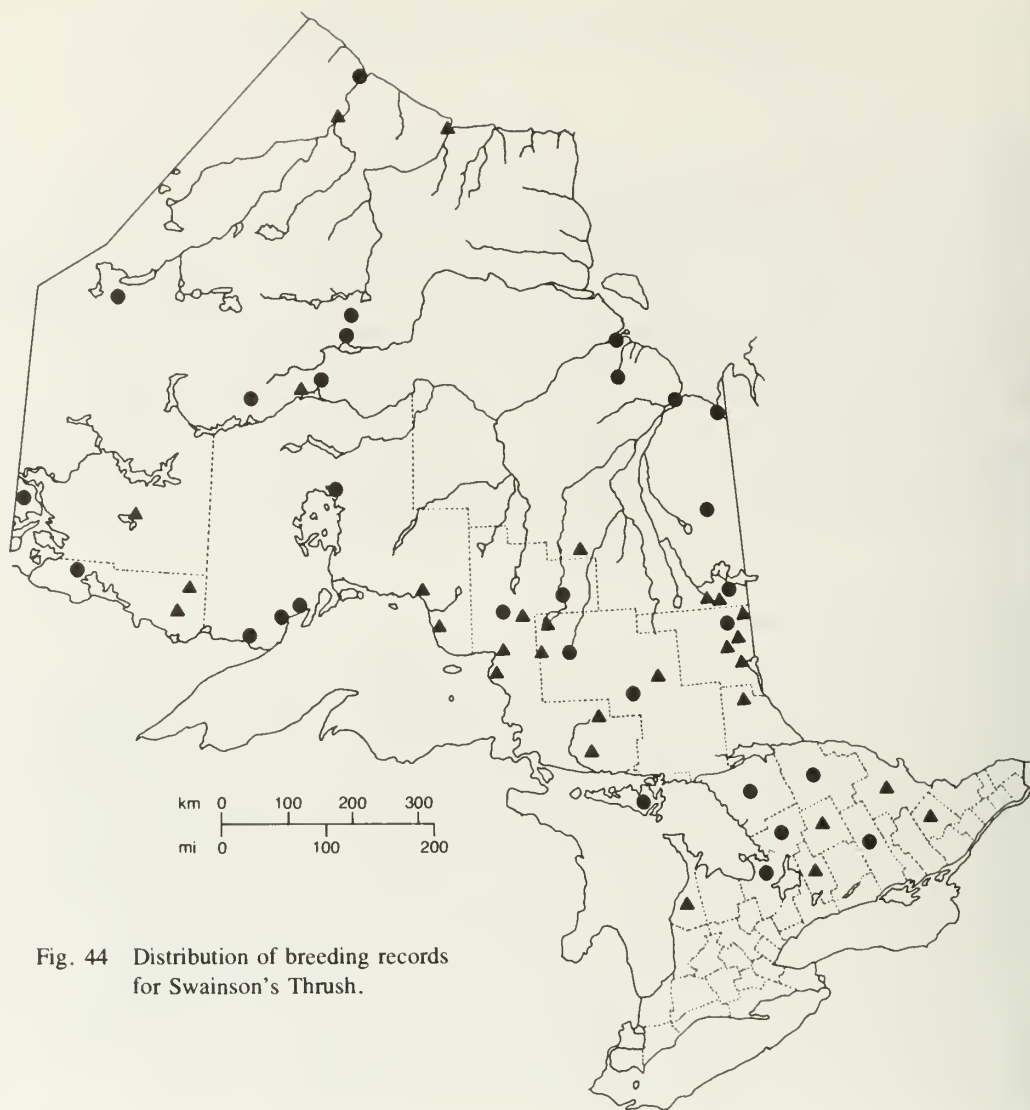


Fig. 44 Distribution of breeding records for Swainson's Thrush.

Swainson's Thrush, *Catharus ustulatus* (Nuttall)

Nidiology

RECORDS 161 (164 nests) representing 18 provincial regions.

Breeds in mixed (33 nests), coniferous (26 nests), and deciduous (6 nests) woods. Nests were often in wet areas such as bogs and swamps, which may have indicated only the presence of such preferred nest trees as black spruce, alder, and willow. Dense woods and thickets were selected more often than were open areas (shorelines, clearings, and road edges).

Nests were invariably in trees and shrubs which were usually living, but were sometimes dead or partly dead (22 nests). Coniferous trees (5 spp., 85 nests) were chosen more often than deciduous trees and shrubs (6 spp., 36 nests), and most nest trees were small and/or young. The DBH of 7 nest trees ranged from 2.5 to 15 cm (1 to 6 inches). Trees selected most often were spruce spp. (53 nests), balsam fir (21 nests), alder spp. (11 nests), willow spp. (8 nests), and birch spp. (8 nests). Tops of tree stubs (8 nests), fallen trees (6 nests), and an open cavity in the side of a standing tree (1 nest) were occasionally used for nest sites. Nests were positioned in crotches, or less often on lateral branches, and were more apt to be at or near the trunk (29 nests) than away from it (6 nests). Distances from the trunk of 4 nests ranged from 1 to 1.8 m (3.3 to 6 ft). One nest was wedged between the adjacent trunks of a small balsam fir and a large yellow birch. Nest positions varied from the top to the lower part of the tree or bush, without apparent significance. An unusual nest was on the top of a hummock, outside the centre of an alder clump and was ca 0.3 m (1 ft) above the surrounding ground level. One nest was beneath the nest of a Blackburnian Warbler in a different tree, and another nest was 18 m (60 ft) distant from a nest of Northern Flicker. Heights of 137 nests ranged from 0.3 to 9 m (1 to 30 ft), with 68 averaging 0.9 to 2.4 m (3 to 8 ft).

Nests (Fig. 160B) were described as bulky, well-made cups, a number of which had lengths of vegetation trailing to 40 cm (15.7 inches) below the main structure. Exteriors were formed of grasses and other plant stalks, twigs, bark strips (usually birch), mosses, leaves, lichens, ferns, mud, plant fibres, and pine needles. Linings were of black rootlets, fine grasses, leaf fragments, animal hair, fine plant material, mosses, and bark strips. The exteriors of several far northern nests were formed almost entirely of horsetail. Ten nests had outside diameters ranging from 10 to 14 cm (4 to 5.5 inches), inside diameters from 6 to 8 cm (2.4 to 3.2 inches), outside depths from 6 to 15 cm (2.4 to 6 inches), and inside depths from 3.5 to 5 cm (1.4 to 2 inches).

EGGS 110 nests with 1 to 4 eggs; 1E (5N), 2E (11N), 3E (47N), 4E (47N).

Average clutch range 3 to 4 eggs (94 nests).

Cowbird parasitism 141 nests with 1 parasitized (0.7%).

INCUBATION PERIOD 4 nests: 2 of 12 days, 1 of ca 13 days, 1 of at least 13 days.

EGG DATES 110 nests, 28 May to 29 July (121 dates); 55 nests, 15 June to 3 July.

The protracted period of egg dates suggests double broods, although none were reported.

Breeding Distribution

The Swainson's Thrush breeds throughout the province from Muskoka DM and Haliburton County north to the limit of trees. A few may still persist as far south as Bruce, Victoria, and Lanark counties.

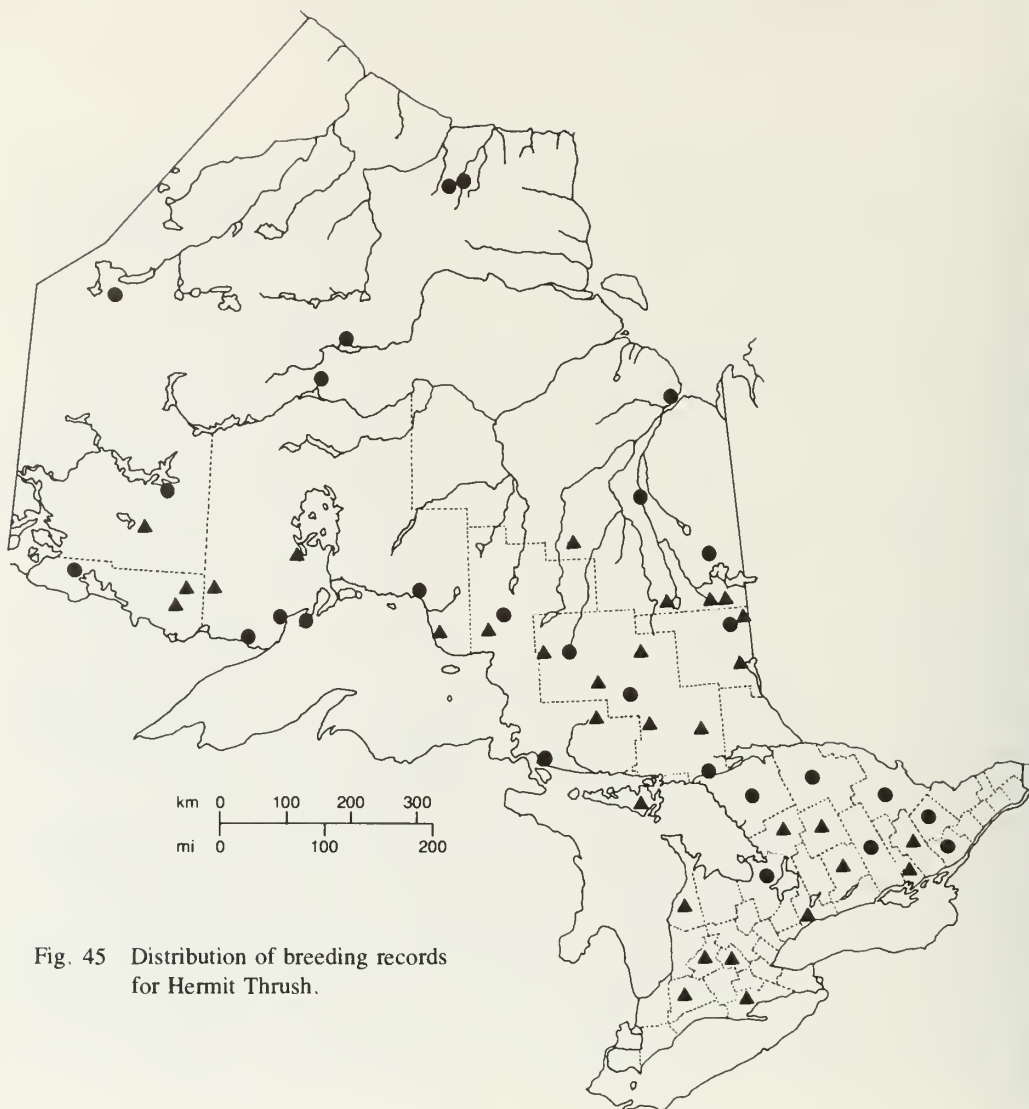


Fig. 45 Distribution of breeding records for Hermit Thrush.

Hermit Thrush, *Catharus guttatus* (Pallas)

Nidiology

RECORDS 160 nests representing 25 provincial regions.

Breeds in both dry and wet wooded areas (102 nests); on rocky outcrops, usually with sparse deciduous growth (7 nests); in sphagnum bogs (5 nests); on blueberry barrens (2 nests); on limestone savannahs (1 nest); in rocky, open burns (1 nest); and in grassy areas of alder growth near a wood (1 nest). Wooded areas were coniferous (36 nests), mixed (25 nests), deciduous (23 nests), and unspecified (18 nests). The selected tree stands were more often open than closed; otherwise, nests were often in clearings, or near woods edges, shorelines, and roads.

Nests were usually placed on the ground (91 nests); some were elevated in deciduous and coniferous shrubs, saplings, and trees (8 nests), on fallen logs and trees (2 nests), in a cavity in a 12.7-cm (5 inches) diameter sugar maple (1 nest), on a tree stub (1 nest), and on roots (1 nest); 1 elevated nest was without specifications. Heights of 9 of the elevated nests ranged from 0.08 to 1.8 m (0.25 to 6 ft), with 5 averaging 0.3 to 0.9 m (1 to 3 ft). Four other nests, all basically on the ground, were reported as elevated, with 2 in the sides of road cuts at 0.8 and 1.4 m (2.5 and 4.5 ft), 1 in a crack in a vertical rock face at 1.2 m (4 ft), and 1 on the edge of a boulder at 1.8 m (6 ft). One other nest was reported in an abandoned mine shaft with no other details given. Ground nests were often in depressions and were placed among or at the bases of shrubs and vines (37 nests); at the bases of trees and stumps (17 nests); among clumps of ferns, grass, and other plants (17 nests); sunk in moss and mossy hummocks (11 nests); under tree branches (10 nests); beside a rock (1 nest); under a log (1 nest); and on an upturned root (1 nest). One nest was reported 6 m (20 ft) distant from the active nest of an Ovenbird.

Nests were neat, woven cups with rather bulky, rough exteriors. Outer material was composed of grasses, leaves, mosses, twigs, bark strips, pine needles, plant stalks, rootlets, wood pieces, hair, mud, and lichens. Linings were often of pine needles, as well as fine rootlets, fine grasses, fine plant stalks, hairs (porcupine in 1 nest), leaves, mosses, bark, and willow catkins. Ten nests had outside diameters ranging from 10 to 15 cm (4 to 6 inches), inside diameters from 6 to 7 cm (2.4 to 2.8 inches), outside depths from 5 to 8 cm (2 to 3.1 inches), and inside depths from 3.5 to 5.5 cm (1.4 to 2.2 inches).

EGGS 130 nests with 1 to 5 eggs; 1E (2N), 2E (7N), 3E (45N), 4E (73N), 5E (3N).

Average clutch range 4 eggs (73 nests).

One nest contained 2 infertile runt eggs.

Cowbird parasitism 154 nests with 11 parasitized (7.1%).

INCUBATION PERIOD 6 nests: 1 of 11 days, 1 of at least 11 days, 1 of no more than 11 days, 1 of at least 12 days, 1 of 12 days, 1 of at least 13 days.

EGG DATES 128 nests, 14 May to 15 August (153 dates); 64 nests, 5 June to 2 July.

A probable second nesting was reported, and the protracted period of egg dates strongly suggests double broods.

Breeding Distribution

The Hermit Thrush breeds throughout the province with the exception of the tundra areas of the extreme north; in most southern agricultural regions only small numbers still persist, in those localities where forest tracts remain.

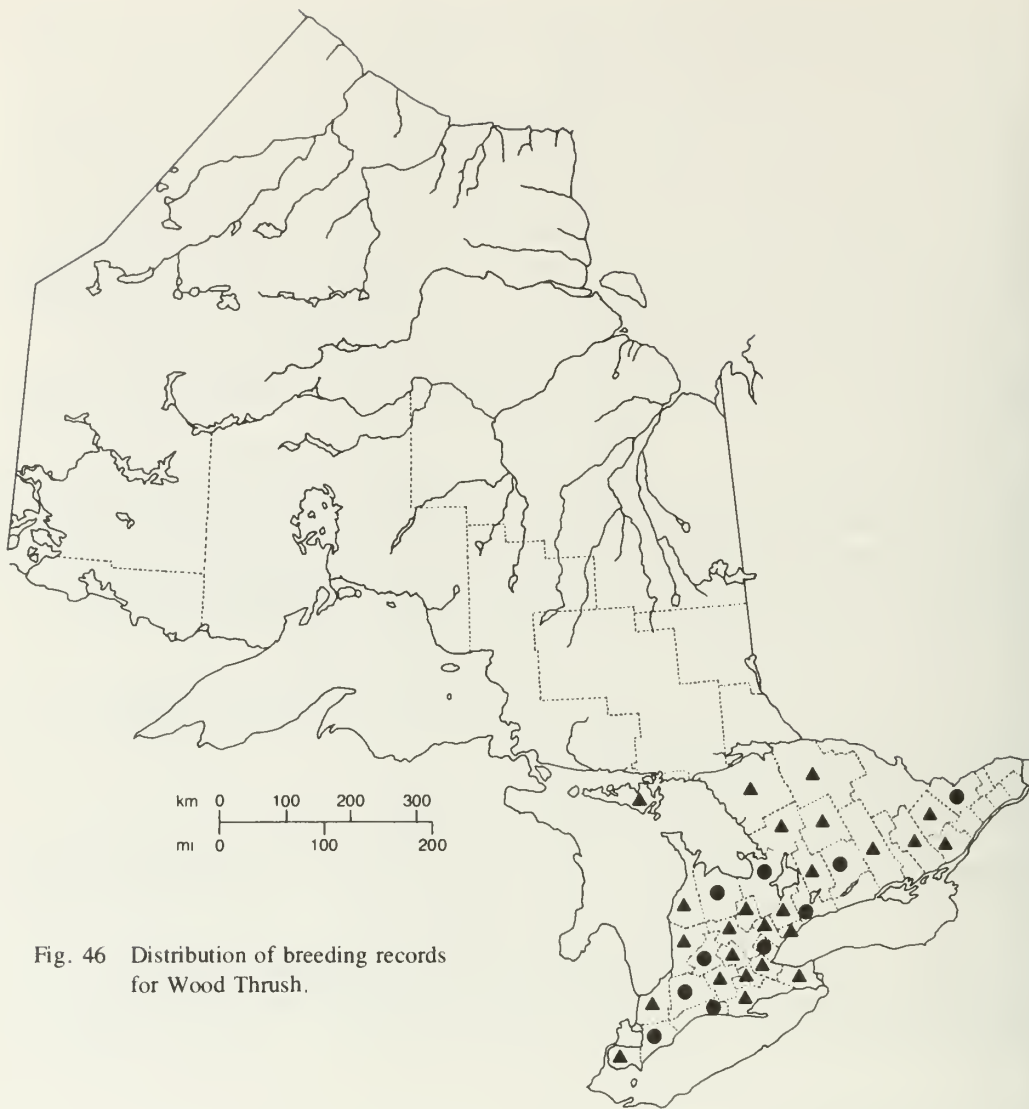


Fig. 46 Distribution of breeding records for Wood Thrush.

Wood Thrush, *Hylocichla mustelina* (Gmelin)

Nidiology

RECORDS 233 nests representing 36 provincial regions.

Breeds primarily in wooded areas, both dense and open, with deciduous (68 nests) and mixed (44 nests) woods greatly preferred over coniferous woods and plantations (4 nests). Woodland areas were both wet and dry, and second-growth woods were selected more often than mature woods. Four nests were reported in overgrown fields, 2 in fencerows, and 2 in alder swamps.

Nests were invariably elevated, in living saplings (65 nests), in trees (27 nests), in shrubs (28 nests), and on the tops of dead stubs (3 nests). Deciduous trees and shrubs (17 spp., 142 nests) were preferred over coniferous species (6 spp., 28 nests), and those most frequently selected were maple spp. (71 nests), beech (24 nests), hawthorn spp. (16 nests), hemlock (11 nests), and white cedar (9 nests). The DBH of 6 saplings ranged from 2.5 to 7.6 cm (1 to 3 inches). Nests were randomly situated from the lowest part of the nest tree or shrub to near the top, and were positioned on lateral branches (53 nests), as well as in crotches or forks (49 nests). They were at or near the trunk (25 nests), as well as away from it (16 nests). Distances from the trunk of 9 nests ranged from 0.3 to 4.5 m (1 to 14.8 ft), with 4 averaging 1.2 to 3 m (4 to 10 ft). Heights of 201 nests ranged from 0.3 to 9 m (1 to 30 ft), with 101 averaging 1.8 to 3 m (6 to 10 ft).

Nests were deep, bulky bowls with rough exteriors and were occasionally poorly made (2 nests). Their exteriors characteristically were formed of grasses and leaves, and most also contained mud. Other exterior materials were small twigs, plant stalks, bark strips (often birch bark), rootlets, paper, mosses, string, cellophane and plastic, leaf petioles, and pine needles. Linings were of rootlets, grasses, mud, pine needles, dung, hair, bark, and fine twigs. Three nests had no lining over the mud interior, and 2 others had linings of grass only. Seven nests had outside diameters ranging from 12 to 14 cm (4.7 to 5.5 inches), inside diameters from 7 to 7.5 cm (2.8 to 3 inches), outside depths from 6 to 9 cm (2.4 to 3.5 inches), and inside depths from 4 to 5.5 cm (1.6 to 2.2 inches).

EGGS 110 nests with 1 to 5 eggs; 1E (5N), 2E (9N), 3E (32N), 4E (61N), 5E (3N).

Average clutch range 4 eggs (61 nests).

Cowbird parasitism 195 nests with 53 parasitized (27.2%).

One nest contained 1 Wood Thrush egg and 12 eggs of Brown-headed Cowbird.

INCUBATION PERIOD 3 nests: 1 of 10 days, 1 of at least 11 days, 1 of at least 12 days.

EGG DATES 149 nests, 4 May to 27 July (167 dates); 75 nests, 30 May to 13 June.

The extremes of these dates suggest probable second broods.

Breeding Distribution

The Wood Thrush has apparently been slowly expanding its range northwards in this century. Baillie and Harrington (1937) had few breeding records as far north as Muskoka DM and Ottawa-Carleton RM, but it is now found throughout the south and regularly in the north at Sault Ste Marie and Sudbury. Although it has been seen in summer north to Rainy River, Thunder Bay, and Wawa, breeding records are currently lacking for the north.

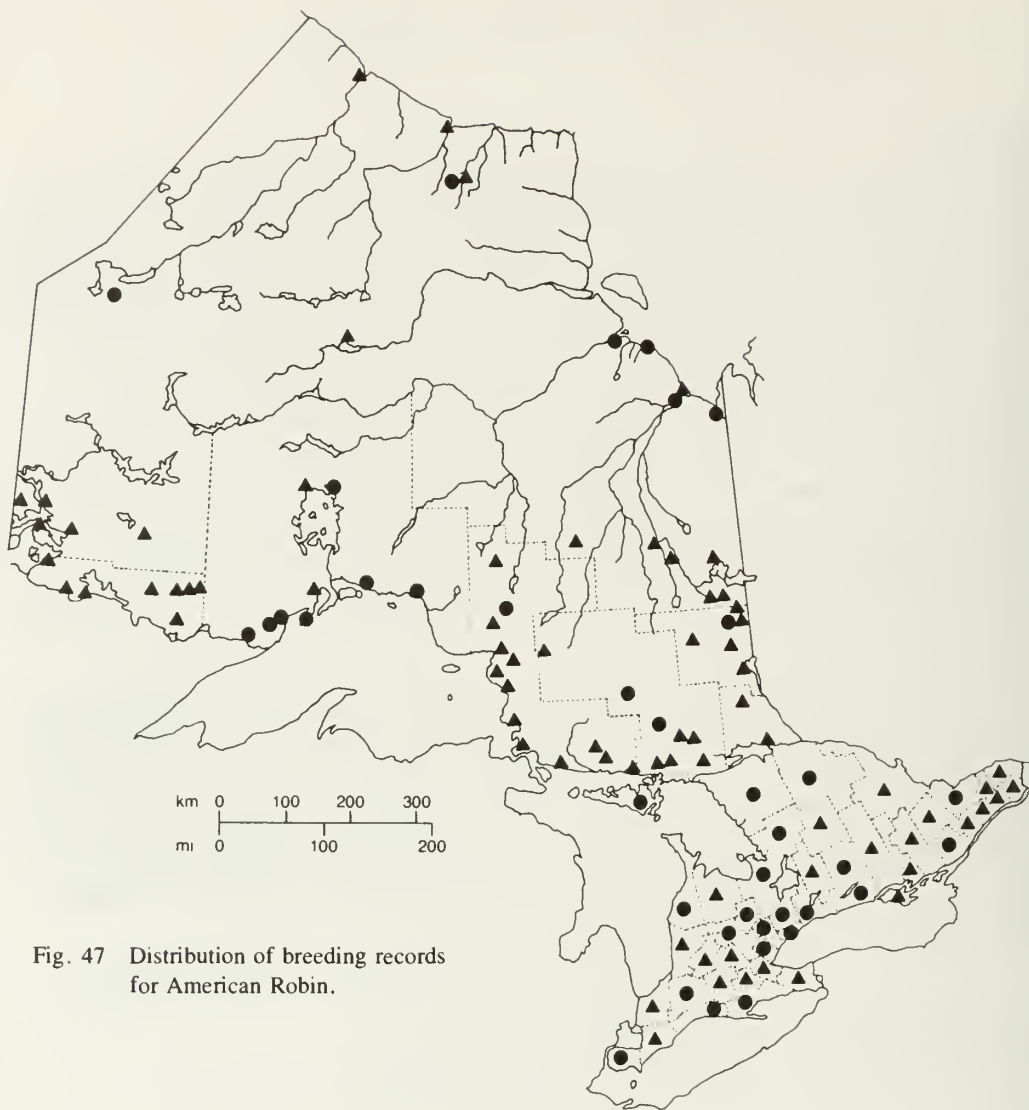


Fig. 47 Distribution of breeding records for American Robin.

American Robin, *Turdus migratorius* Linnaeus

Nidiology

RECORDS 6358 (ca 6400 nests) representing all 52 provincial regions.

Breeds in a wide variety of habitats in urban, rural, and wilderness areas. Based on 2288 nests, habitats include residential gardens, buildings, and tree-lined streets (869 nests—38%) (Fig. 193); open terrain, including farm fields and orchards, roadsides, campgrounds, and mine buildings (803 nests—35.1%); woodlands and swamps (574 nests—25.1%); and bogs, marshes, and beaver ponds (42 nests—1.8%). In woodland habitats, coniferous woods (288 nests) were preferred over deciduous (131 nests) or mixed (123 nests) woods, and over

wooded swamps (32 nests). Dry habitats (2059 nests) were greatly preferred over wet (229 nests).

Nest positioning was extremely variable and may generally be summarized as follows: in trees, bushes, and vines, and on stumps, fallen trees, and roots (1687 nests); on or in buildings and other manmade structures (449 nests); on cliff or quarry ledges (3 nests); on the ground (3 nests). Tree nests were most often in crotches (502 nests), although many were on horizontal branches (208 nests) and of the latter, distances from the trunk of 30 nests ranged from 0.2 to 6 m (0.7 to 20 ft), with 16 averaging 0.9 to 2 m (3 to 7 ft). In both positions nests were sometimes near the main trunk. A tendency for tree nests to be placed at a midpoint height in the nest tree was noted. Tree nests were almost equally divided between deciduous (61 spp., 845 nests) and coniferous (20 spp., 842 nests), with spruce spp. (338 nests), white cedar (234 nests), hawthorn spp. (217 nests), pine spp. (182 nests), maple spp. (182 nests), and apple (123 nests) used most often. Four nests were in tree cavities. Nests were reported in the same tree as active nests of Chipping Sparrow and Common Grackle, and 1 nest was in the same tree as nests of House Finch and House Sparrow. One unusual record described a nesting group of American Robins that approximated a colonial situation: ca 25 pairs were nesting on the steel beams beneath a concrete highway bridge over a river, and although nests were often separated only by the thickness of the steel, the birds could not see each other while at their nests. Although most tree nests of this species were over dry ground, a few were over water. Heights of 2418 nests in all locations ranged from on the ground to 21 m (70 ft), with 1209 averaging 1.4 to 3 m (4.5 to 10 ft).

Most nests were described as cups of mud and grass, and a few (5 nests) as woven. In the relatively small number of nests not containing mud, 46 contained grass only, 1 contained grass and other plant materials, 1 grass and string, and 1 sticks only. A few nests (56) were described as untidy, i.e., with lengths of grass, string, cellophane, and plastic hanging from the nest. Some nests (43) were reused, and among these were the nests of other species (1 each of Eastern Phoebe, Barn Swallow, Blue Jay, and Gray Catbird, and 4 of Common Grackle). Old American Robin nests (32) were repaired and reused, and 2 were reused without repair. One double-tiered and 1 triple-tiered nest were also reported.

The following materials have been noted incorporated with the basic mud nest structure: plant stems, twigs, grass/straws, string, rootlets, bark, paper/plastic/cellophane, leaves, mosses and lichens, cloth, hair, feathers, pine needles, corn husks, and manure. Most nests were homogeneously lined with grass, and a few others with rootlets, hair, plant stalks, feathers, and pine needles. Reports of 10 unlined nests were received, and 5 of these were formed entirely of mud. Ten nests had outside diameters ranging from 11.4 to 17.8 cm (4.5 to 7 inches), inside diameters from 8.3 to 12.7 cm (3.3 to 5 inches), outside depths from 7.6 to 12.7 cm (3 to 5 inches), inside depths from 4.4 to 5.7 cm (1.8 to 2.3 inches), and rim widths from 1 to 3.8 cm (0.4 to 1.5 inches).

EGGS 1581 nests, with 1 to 6 eggs; 1E (76N), 2E (241N), 3E (568N), 4E (662N), 5E (26N), 6E (8N).

Average clutch range 3 to 4 eggs (1230 nests).

Eggs were laid at daily intervals.

Cowbird parasitism 5446 nests with 17 parasitized (0.3%).

The American Robin is a known rejecter species (Rothstein, 1975).

INCUBATION PERIOD 109 nests, 9 to 15 days, with 84 averaging 11 to 13 days; 1 of 9 days, 9 of 10 days, 36 of 11 days, 31 of 12 days, 17 of 13 days, 10 of 14 days, 5 of 15 days.

Incubation usually commenced with the laying of the last egg.

EGG DATES 1663 nests, 8 April to 15 August (2046 dates); 831 nests, 4 May to 12 June. Renestings were reported. Eight double broods and 1 triple brood were recorded.

Breeding Distribution

The American Robin breeds throughout Ontario.

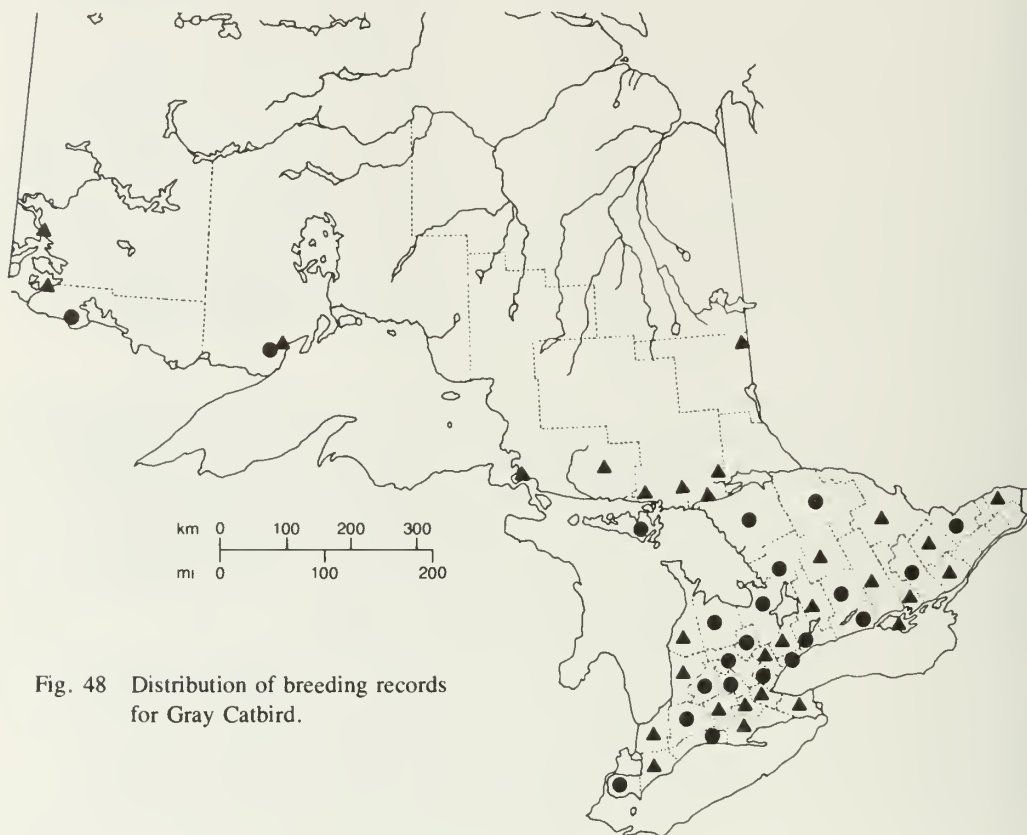


Fig. 48 Distribution of breeding records for Gray Catbird.

Gray Catbird, *Dumetella carolinensis* (Linnaeus)

Nidiology

RECORDS 1367 (1371 nests) representing 46 provincial regions.

Breeds in shrubby, overgrown fields and pastures (117 nests); in deciduous (22 nests), coniferous (21 nests), mixed (17 nests), and unspecified (14 nests) woodlands; in urban and rural gardens, cottage areas, fairgrounds, and farmyards (36 nests); in river flood plains (16 nests); in orchards and farm fencerows (13 nests); in wet areas (willow swales, alder thickets, bogs, beaver meadows, and marshes) (26 nests); and on road and railroad right-of-ways (5 nests). Woodlands were usually open, and many nests were at the edges of woods, or along roads, paths, and shorelines, and some were at clearings. One nest tree was reported in an isolated position in 0.6 m (2 ft) of water in a small lake.

Nests were almost always elevated in living (9 in dead) shrubs, trees, and vines; 2 nests were supported by cattails, 1 was in a brush pile, 1 was on a vine-covered trellis, and 4 others were in fallen trees. A nest on, or very near the ground, was reported in a vine tangle at the base of a beech tree. Most nest trees were small or saplings. Deciduous shrubs, trees, and vines (37 spp., 294 nests) were greatly preferred to coniferous trees and shrubs (8 spp., 65 nests), and those most often selected were hawthorn spp. (57 nests), grape vine spp. (23 nests), bramble (*Rubus*) spp. (23 nests), willow spp. (21 nests), apple (20 nests), white cedar (19 nests), spruce spp. (18 nests), and dogwood spp. (17 nests). Nests were randomly positioned at low to high points in shrubs and saplings, and were somewhat more often located centrally near the main trunk than away from it. Nests were usually well concealed in upright crotches, on horizontal branches, and occasionally between 2 adjacent upright trunks. Distances from the main trunk of 7 nests ranged from 0.1 to 1.5 m (0.3 to 5 ft). Two nests were 18 m (60 ft) from other active Gray Catbird nests, another was 4.3 m (14 ft) from a Brown Thrasher nest, and a fourth was 4.5 m (15 ft) from a nest of Cedar Waxwing. Heights of 352 nests ranged from 0.3 to 4.9 m (1 to 16 ft), with 176 averaging 1.1 to 1.8 m (3.5 to 6 ft).

Nests were loosely built, bulky cups with exteriors composed of sticks and twigs, grasses, plant stalks and fibres, bark strips, leaves, paper/plastic/cellophane, rush/reed pieces, rootlets, rags, plant down, wood chips, vine tendrils, string, and mud. Linings were characteristically woven of rootlets, and less often of bark strips, grasses, leaves, plant fibres, pine needles, twigs, hair, and vine tendrils. A nest supported in cattails was entirely made of cattail stalks and sheaths. A nest with 2 bowls side by side (1 partially tipped over) found in a wild grape vine was photographed (ROM PR 384). Thirteen nests had outside diameters ranging from 9 to 24 cm (3.5 to 9.4 inches), inside diameters from 5.5 to 13 cm (2.2 to 5.1 inches), outside depths from 6.5 to 13 cm (2.6 to 5.1 inches), and inside depths from 3.4 to 9 cm (1.3 to 3.5 inches).

EGGS 302 nests with 1 to 6 eggs; **1E** (5N), **2E** (23N), **3E** (98N), **4E** (153N), **5E** (22N), **6E** (1N).

Average clutch range 4 eggs (153 nests).

One of the 1-egg clutches and the 6-egg clutch were incubated and hatched. Eggs were usually laid daily, but at 1 nest there was a 2-day lapse between the first and second eggs.

Cowbird parasitism 1193 nests with 18 parasitized (1.5%).

Reports were received of Gray Catbirds ejecting cowbird eggs, and since the species is a known rejecter (Rothstein, 1975), the percentage parasitism is undoubtedly higher than reported.

INCUBATION PERIOD 24 nests, 11 to 15 days: 1 of 11 days, 2 of no more than 11 days, 1 of ca 11 days, 2 of at least 11 days, 3 of 12 days, 1 of ca 12 days, 5 of at least 12 days, 4 of 13 days, 2 of at least 13 days, 2 of 14 days, 1 of 15 days.

EGG DATES 304 nests, 2 May to 18 August (415 dates); 152 nests, 2 June to 17 June. Renestings and double broods were both reported.

Breeding Distribution

The Gray Catbird breeds throughout southern Ontario and as far north as Kenora and Kirkland Lake.

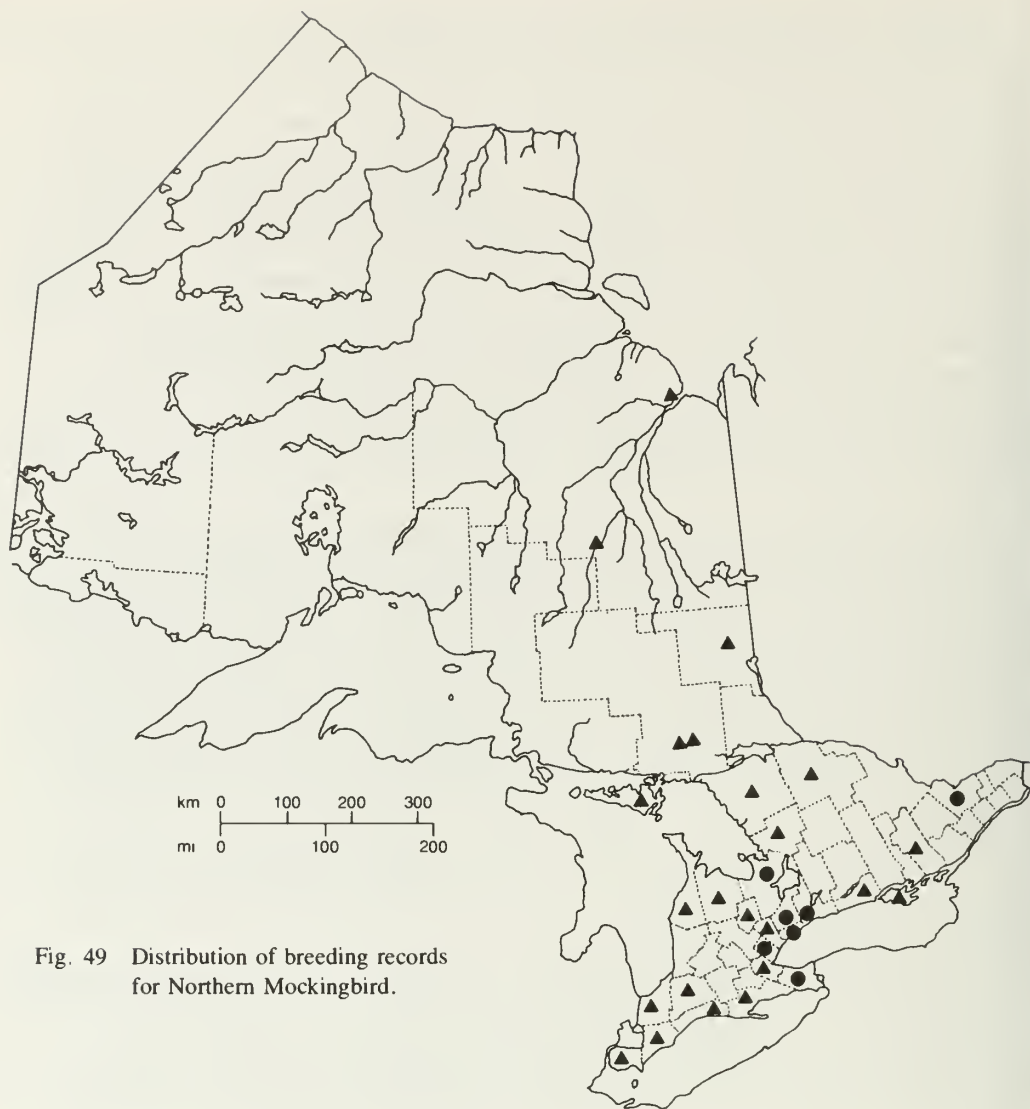


Fig. 49 Distribution of breeding records for Northern Mockingbird.

Northern Mockingbird, *Mimus polyglottos* (Linnaeus)

Nidiology

RECORDS 74 nests representing 26 provincial regions.

Breeds in a variety of habitats: rural fields, pastures, orchards, and flood plains (26 nests); residential gardens (Fig. 193) and cemeteries (17 nests); shrub- and tree-covered sand dunes (6 nests); coniferous woods and plantations (5 nests); deciduous woods (4 nests); a shrubby marsh border (1 nest); and a park campground (1 nest). The wooded habitats tended to be more open than closed.

Nests were in living trees, shrubs, and vines, with deciduous species (10 spp., 36 nests) preferred to coniferous (5 spp., 22 nests). Tree species used most commonly were hawthorn spp. (20 nests), cedar spp. (11 nests), spruce spp. (4 nests), maple spp. (4 nests), and pine spp. (4 nests). Nests were usually well concealed, and were randomly positioned in crotches and on branches near or at the trunk, or at the end of horizontal and drooping branches. They were usually supported by upright branches. Heights of 58 nests ranged from 0.5 to 4 m (1.5 to 13 ft), with 29 averaging 1.1 to 2 m (3.5 to 7 ft).

Nests were usually loose, bulky structures with shallow to fairly deep cups. One nest was described as frail and thin. Their exteriors were composed of small sticks and twigs into which were variously woven grasses, plant stalks, leaves, string, roots (1 nest was almost entirely formed of poison ivy roots), bark, plant fibres, mosses, corn husks, hair, cigarette filters, and paper. Linings were of finer grasses, rootlets, plant stems and fibres, bark strips, poplar catkins, and a shoelace. Three nests had outside diameters ranging from 13 to 18 cm (5.1 to 7 inches), inside diameters from 6 to 8 cm (2.4 to 3.1 inches), outside depths from 7.5 to 12 cm (3 to 4.7 inches), and inside depths from 3.5 to 4.5 cm (1.4 to 1.8 inches).

EGGS 46 nests with 1 to 5 eggs; 1E (1N), 2E (4N), 3E (12N), 4E (25N), 5E (4N).

Average clutch range 4 eggs (25 nests).

INCUBATION PERIOD 8 nests, 11 to 13 days: 3 of ca 11 days, 1 of 12 days, 2 of ca 12 days, 1 of 13 days, 1 of ca 13 days.

EGG DATES 38 nests, 23 May to 8 August (54 dates); 19 nests, 15 June to 5 July.

Two double broods were reported, and 5 renestings were noted after failure of the first clutch. The renestings were in new nests 6 to 46 m (20 to 150 ft) distant from the original site.

Breeding Distribution

Although still a relatively rare breeding bird, the Northern Mockingbird (Fig. 194B) has a widespread distribution as far north as Moosonee. In most of its range, dominated by the Canadian Shield, the species is restricted to agricultural or residential areas. There are a number of summer sightings in the western part of northern Ontario, but no nest records are available.

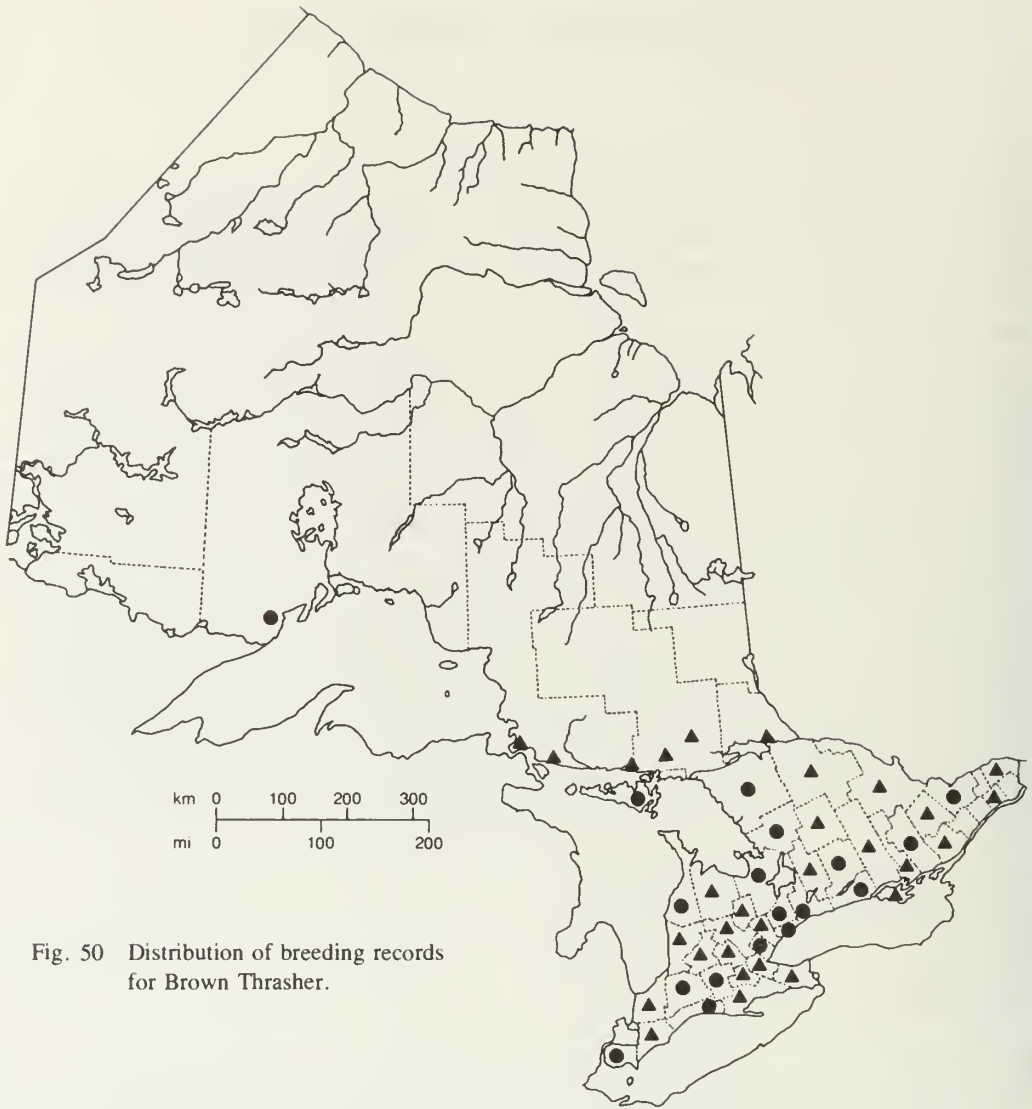


Fig. 50 Distribution of breeding records for Brown Thrasher.

Brown Thrasher, *Toxostoma rufum* (Linnaeus)

Nidiology

RECORDS 805 (810 nests) representing 44 provincial regions.

Breeds in rural areas: in hawthorn meadows (128 nests); in overgrown farm fields and pastures (121 nests); in orchards and vineyards (8 nests); in willow swales (4 nests); in gravel pits (4 nests); and in river flood plains (2 nests). Breeds in woodlands: in mixed (33 nests), deciduous (23 nests), coniferous (17 nests), and unspecified (17 nests) woods. Other breeding habitats are: along fencerows, and road and railway right-of-ways (82 nests); in residential

gardens (31 nests), and other urban and rural areas (cemeteries, parkway medians, golf courses, fairgrounds, and parks) (10 nests); in sand-dune areas (10 nests); at marsh edges (2 nests); and on limestone savannahs (2 nests). Woodlands were often open and many of these nest sites were at edges, clearings, and hydro cuts, and near shorelines. Dry areas were much preferred to wet areas.

Nests were both elevated above ground (487 nests) and placed on the ground (161 nests). Most elevated nests were placed in shrubs, trees, and vines, with a few on fallen trees, branches, and brush. One nest was on a fence among vines and another was in a limestone crevice 1.7 m (5.5 ft) above surrounding ground level. Deciduous shrubs and trees (27 spp., 334 nests) were much more often selected for nest sites than were coniferous trees and shrubs (5 spp., 40 nests). The species most frequently chosen were predominantly hawthorn spp. (211 nests), and also included grape and other vine spp. (29 nests), white cedar (15 nests), apple (13 nests), rose spp. (12 nests), lilac (11 nests), and pine spp. (10 nests). Shrub and tree nests were placed in crotches and some were on horizontal branches. They were randomly located from near the trunk to away from it, and at various levels in the supporting tree or shrub. A few nests were supported between vertical main stems, and 1 tree nest was under fallen pieces of bark. Two nests of this species were in the same hedgerow, 3 other nests were in the same vicinity, and 1 nest was 4.3 m (14 ft) distant from an occupied nest of Gray Catbird. Heights of 487 nests ranged from 0.2 to 6.7 m (0.5 to 22 ft), with 243 averaging 0.9 to 1.5 m (3 to 5 ft). Ground nests were variously placed under or near the bases of shrubs, trees, and vines (73 nests); under branches and brush, and fallen trees (12 nests); under plants, dead weeds, and long grass (14 nests); under ends of logs (8 nests); under boards and picnic tables (3 nests); under a rail fence (1 nest); between 2 blades of a disc-harrow (1 nest); on a root at a tree base (1 nest); inside a wire guard on a young apple tree (1 nest); and beside a rock (1 nest). Some ground nests were in depressions and some were concealed in grasses, although a few were reported to be exposed.

Nests were bulky, woven cups with loosely built exteriors of sticks and twigs, grasses, leaves, plant stalks and fibres, bark strips, paper and plastic, rootlets, pine needles, mud, feathers, and string. Linings were characteristically woven of rootlets and fine grasses to which were sometimes added small twigs, bark strips, hair, leaves, and pine needles. One nest was built on an old nest thought to have been that of an American Robin. Eight nests had outside diameters ranging from 13 to 30.5 cm (5 to 12 inches), inside diameters from 7.5 to 13 cm (3 to 5 inches), outside depths from 7.5 to 23 cm (3 to 9 inches), and inside depths from 2.5 to 6.5 cm (1 to 2.6 inches).

EGGS 287 nests with 1 to 7 eggs; 1E (9N), 2E (20N), 3E (75N), 4E (155N), 5E (26N), 6E (1N), 7E (1N).

Average clutch range 4 eggs (155 nests).

Cowbird parasitism 742 nests with 18 parasitized (2.4%).

The Brown Thrasher is a known rejecter species (Rothstein, 1975).

INCUBATION PERIOD 19 nests, 10 to 14 days: 1 of at least 10 days, 1 of no more than 11 days, 3 of 11 days, 2 of at least 11 days, 1 of ca 12 days, 4 of 12 days, 2 of at least 12 days, 1 of ca 13 days, 2 of 13 days, 1 of at least 13 days, 1 of no more than 14 days.

EGG DATES 288 nests, 20 April to 20 July (414 dates); 144 nests, 25 May to 9 June. Second broods were reported in the same nest and in new nests. Renesting in the same nest occurred after egg loss.

Breeding Distribution

The Brown Thrasher breeds throughout southern Ontario, but less commonly on the Canadian Shield. It ranges only a short distance into the north as far as Kenora, Thunder Bay, Wawa, and southern Timiskaming District, and rarely somewhat farther.

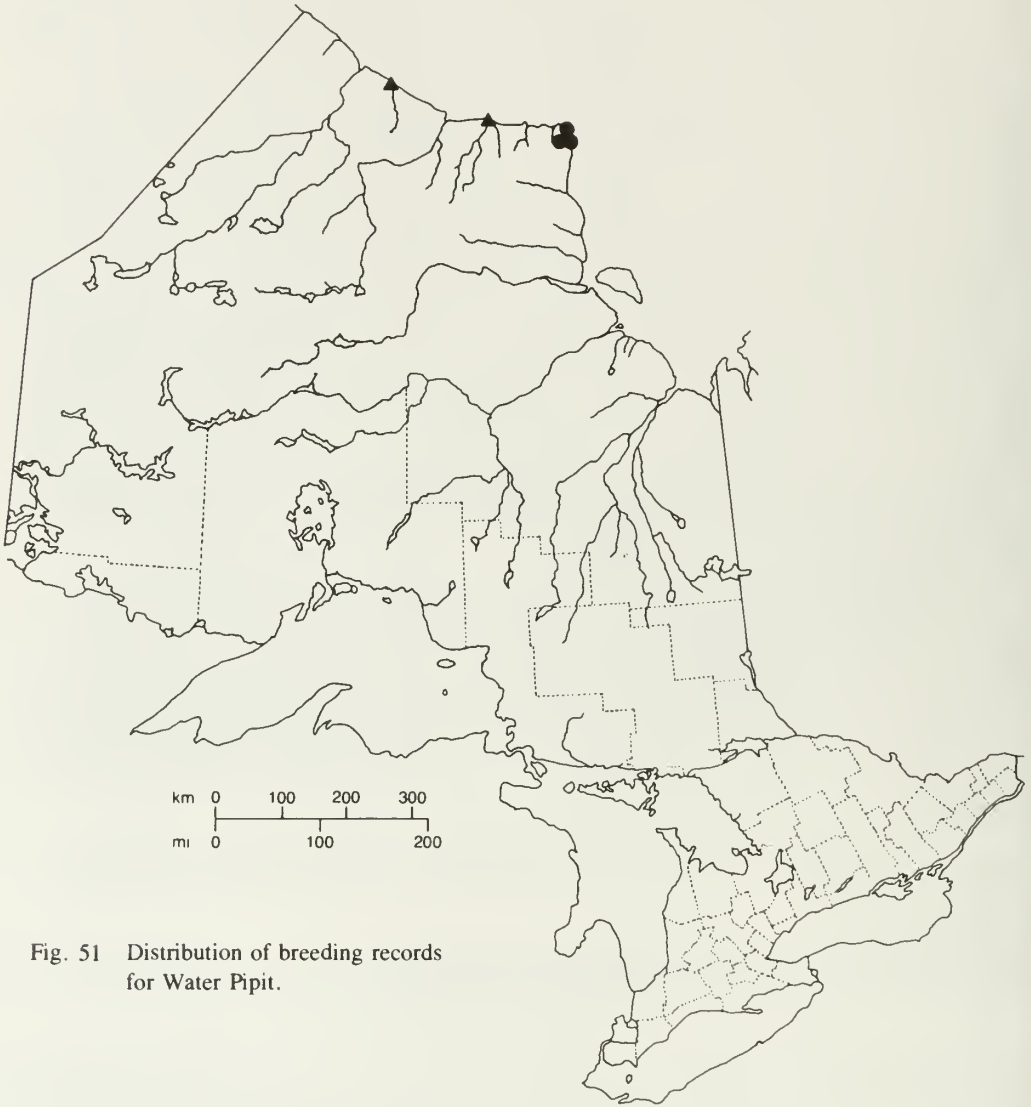


Fig. 51 Distribution of breeding records for Water Pipit.

Water Pipit, *Anthus spinoletta* (Linnaeus)

Nidiology

RECORDS 5 nests representing 1 provincial region.

The first nest of this species for Ontario was discovered on 29 June 1948, south of Cape Henrietta Maria, Kenora District. It contained 6 eggs and was on the side of a mossy bank in an area of coastal tundra. It still contained 6 eggs on 2 July. Five of the subsequent young (ROM 75929-33) were collected between 8 and 12 July, and both adults (ROM 75941, 75943) and the nest (ROM 3886) were collected on 12 July. In 1984, also in the Cape region, 3 nests with 4, 6, and 6 young were found on 5, 6, and 11 July, respectively. On 26 June 1985, a nest with 6 eggs was found on Cape Henrietta Maria, itself. These nests were on dry tundra areas on raised gravel ridges, and 2 were beside tundra ponds. Nests were cups sunken in the sides of heath and lichen hummocks. One of the nests had a short tunnel entrance overhung by a heath plant, and another nest was overhung by a hump of earth. One of the nests was situated 20 m (66 ft) distant from an active nest of Lapland Longspur.

Nest exteriors were formed of coarse grasses, plant stalks, and mosses, and interiors were lined with fine grasses, plant stalks, and in 1 nest with feathers. Outside diameters of 2 nests were 9 and 9.5 cm (3.5 and 3.7 inches); inside diameters of 3 nests were 6, 7, and 8 cm (2.4, 2.8, and 3.1 inches); outside depth of 1 nest was 4.8 cm (1.9 inches); inside depths of 3 nests were 3, 4, and 4 cm (1.2 and 1.6 inches).

Breeding Distribution

Baillie (1962) stated that the first evidence establishing the Water Pipit (Fig. 144A) as a breeding bird of Ontario was collected in 1948 in the Cape Henrietta Maria region. However, a year earlier in 1947, Manning (1952) collected a recently fledged and almost flightless young (NMC 32707) west of Cape Henrietta Maria near the mouth of the Sutton River. Other records of recently fledged young and a female with a brood patch at Fort Severn (Baillie, 1962) indicate that the species probably breeds all along the Hudson Bay coast.



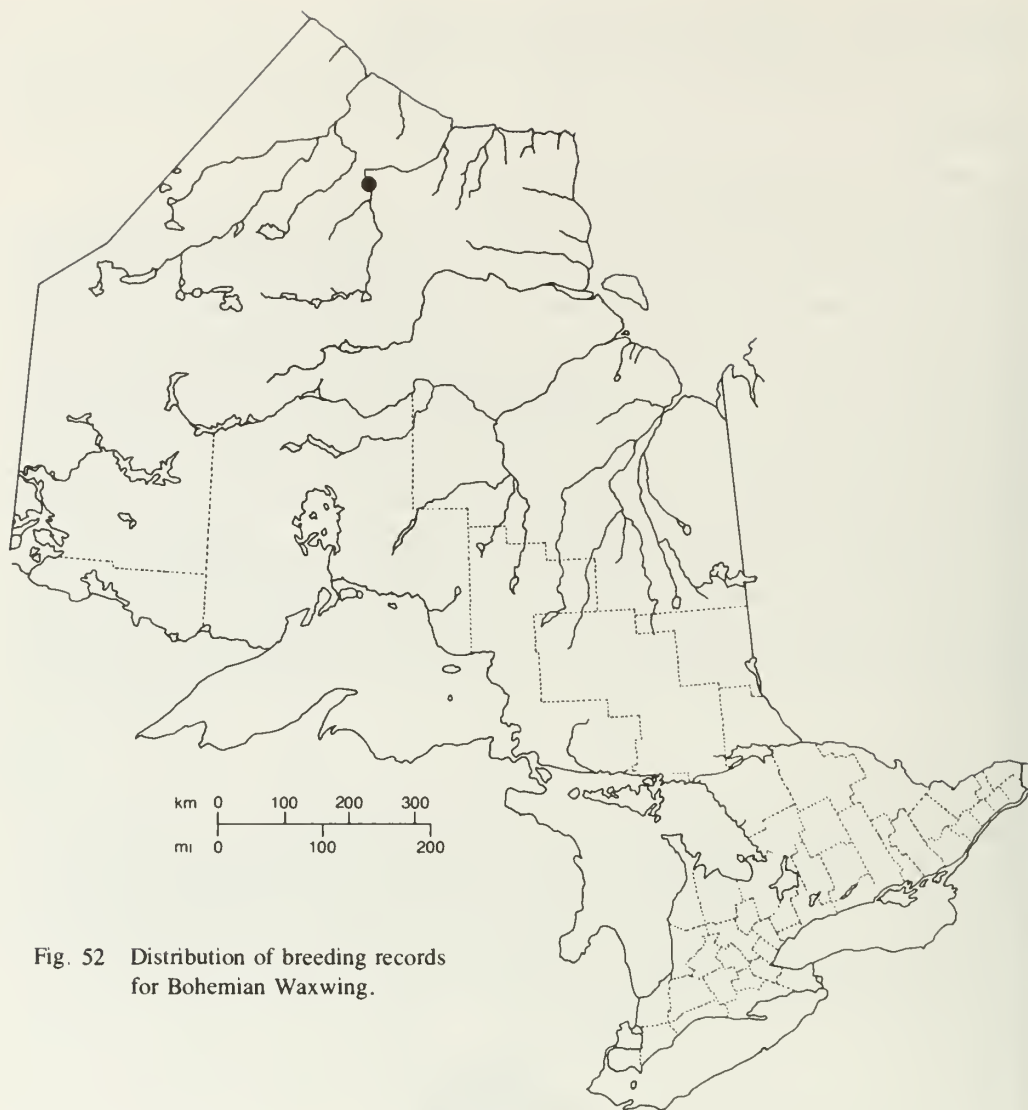


Fig. 52 Distribution of breeding records for Bohemian Waxwing.

Bohemian Waxwing, *Bombycilla garrulus* (Linnaeus)

Nidiology

Breeding of this western species was finally confirmed in Ontario in 1984 by the photographing of young birds still being fed by adults (ROM PR 1533-1536). The photographs were secured along the Winisk River by G. Fairfield on 18 July 1984 at 54°32'N 87°13'30''W.

Breeding Distribution

The Bohemian Waxwing (Fig. 206A) breeds in western Canada and was believed to breed as far east as the Churchill, Manitoba, area (Godfrey, 1966). The first indications that the species might breed in Ontario came from the Sutton River below Hawley Lake where D. Baldwin observed them in the summers of 1962, 1964, and 1965. He was also able to collect a female with a brood patch on 19 July 1964 (Schueler et al., 1974), suggesting the possibility of a nearby nest.

In addition to the confirming Winisk River record, a party travelling the Sachigo-Severn Rivers system in the summer of 1984 saw 30 to 40 birds along their route (Weir, 1984).

Observations to date suggest that this species is rather thinly distributed across the northern part of the province in summer, probably within 100 to 200 km (62 to 124 miles) of the Hudson Bay coast, and at least as far east as Hawley Lake, Kenora District. However, since the species wanders widely in winter, the locations where it spends the breeding season may be widely spaced and perhaps variable from year to year.



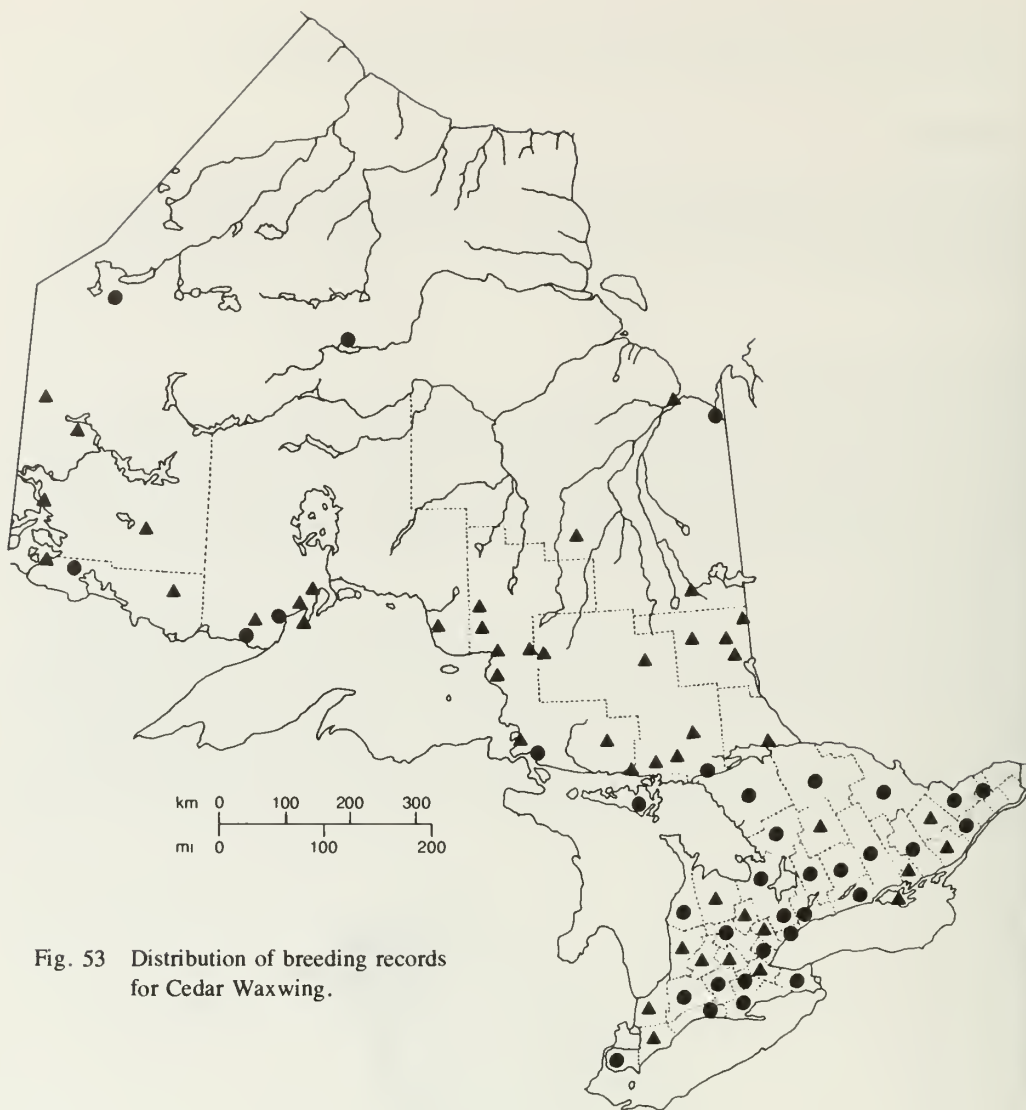


Fig. 53 Distribution of breeding records for Cedar Waxwing.

Cedar Waxwing, *Bombycilla cedrorum* Vieillot

Nidiology

RECORDS 1015 (1020 nests) representing 47 provincial regions.

Breeds in a wide variety of habitats. Those selected were dry and wet woodlands (127 nests), which were usually open and included coniferous, mixed, and deciduous stands; overgrown fields and pastures (90 nests), which included hawthorn meadows (Fig. 179)—the most common habitat in the agricultural south; urban gardens and parks (51 nests); roadsides, and lake and river shorelines (25 nests); campgrounds and cottage areas (22 nests); orchards (17 nests); treed bogs, beaver ponds, and marsh edges (6 nests); rocky outcroppings (5 nests); and treed sand dunes (4 nests).

Nests were invariably elevated in trees, shrubs, and vines which were usually living. Both deciduous (32 spp., 249 nests) and coniferous (8 spp., 131 nests) types were selected, and those most frequently chosen were hawthorn spp. (57 nests), spruce spp. (46 nests), pine spp. (42 nests), maple spp. (38 nests), apple (34 nests), and white cedar (21 nests). Nests were usually well hidden, positioned in crotches as well as on horizontal limbs, and were somewhat more often away from the trunk than against it. Distances from the trunk of 18 nests ranged from 0.2 to 4.6 m (0.5 to 15 ft), with 9 averaging 0.9 to 2.4 m (3 to 8 ft). An unusual location reported was of a nest wedged between a rock face and the roots of a cedar tree. Nests were sometimes as near as 6 m (20 ft) to each other, and in certain confined habitats they were numerous and the species seemed almost colonial. A renesting was observed within 2 m (7 ft) of the first nest. Nests were reported near active nests of Mourning Dove, Gray Catbird, Yellow Warbler, Rose-breasted Grosbeak, Chipping Sparrow, and American Goldfinch. Waxwing nests were noted in the same tree as active nests of Eastern Kingbird, American Robin, and Northern Oriole. Although waxwings usually build their own nest, an old nest of Common Grackle was added to and used by 1 pair, and another pair laid in an empty nest of Willow Flycatcher and shared incubation duties with it. A third nest was built on top of a deserted nest of Yellow Warbler. Heights of 376 nests ranged from 0.8 to 18 m (2.5 to 60 ft), with 188 averaging 1.8 to 3.7 m (6 to 12 ft).

Nests were bulky cups with rough exteriors woven of coarse and fine grasses, other plant stalks and fibres, twigs, catkins and plant down, bark strips, mosses, leaves, hair, rootlets, string, paper/rags/plastic, pine needles, lichens, fern fronds, and part of a fish net. Linings were of plant stalks and fibres, fine grasses, bark strips, hair, plant down, rootlets, pine needles, feathers, lichens, string, and a corn husk. Nine nests had outside diameters ranging from 12 to 16.5 cm (4.7 to 6.5 inches), inside diameters from 6 to 9 cm (2.4 to 3.5 inches), outside depths from 6 to 10 cm (2.4 to 4 inches), and inside depths from 3 to 6 cm (1.2 to 2.4 inches).

EGGS 341 nests with 1 to 6 eggs; 1E (16N), 2E (16N), 3E (55N), 4E (141N), 5E (104N), 6E (9N).

Average clutch range 4 to 5 eggs (245 nests).

One nest contained a runt egg.

Cowbird parasitism 890 nests with 67 parasitized (7.5%).

The percentage parasitism was undoubtedly higher than indicated because the Cedar Waxwing is a known rejecter species (Rothstein, 1975).

INCUBATION PERIOD 28 nests, 10 to 13 days: 1 of ca 10 days, 1 of 10 days, 1 of ca 11 days, 9 of 11 days, 4 of at least 11 days, 1 of no more than 12 days, 2 of ca 12 days, 4 of 12 days, 1 of at least 12 days, 2 of ca 13 days, 1 of 13 days, 1 of at least 13 days.

These incubation periods were ascertained from the laying of the last egg, but as incubation is known to commence before the laying of the last egg (Putnam, 1949), the actual periods were longer than shown, and the length of the hatching period often spread into a second day.

EGG DATES 345 nests, 21 May to 16 September (447 dates); 173 nests, 25 June to 14 July. Renestings occurred in the same nest and in new nests built nearby. Double broods were reported.

Breeding Distribution

The Cedar Waxwing breeds throughout the province at least as far north as Favourable Lake

and Moosonee. Sightings indicate that it may breed much farther north at the latitude of Sutton Lake, Kenora District.

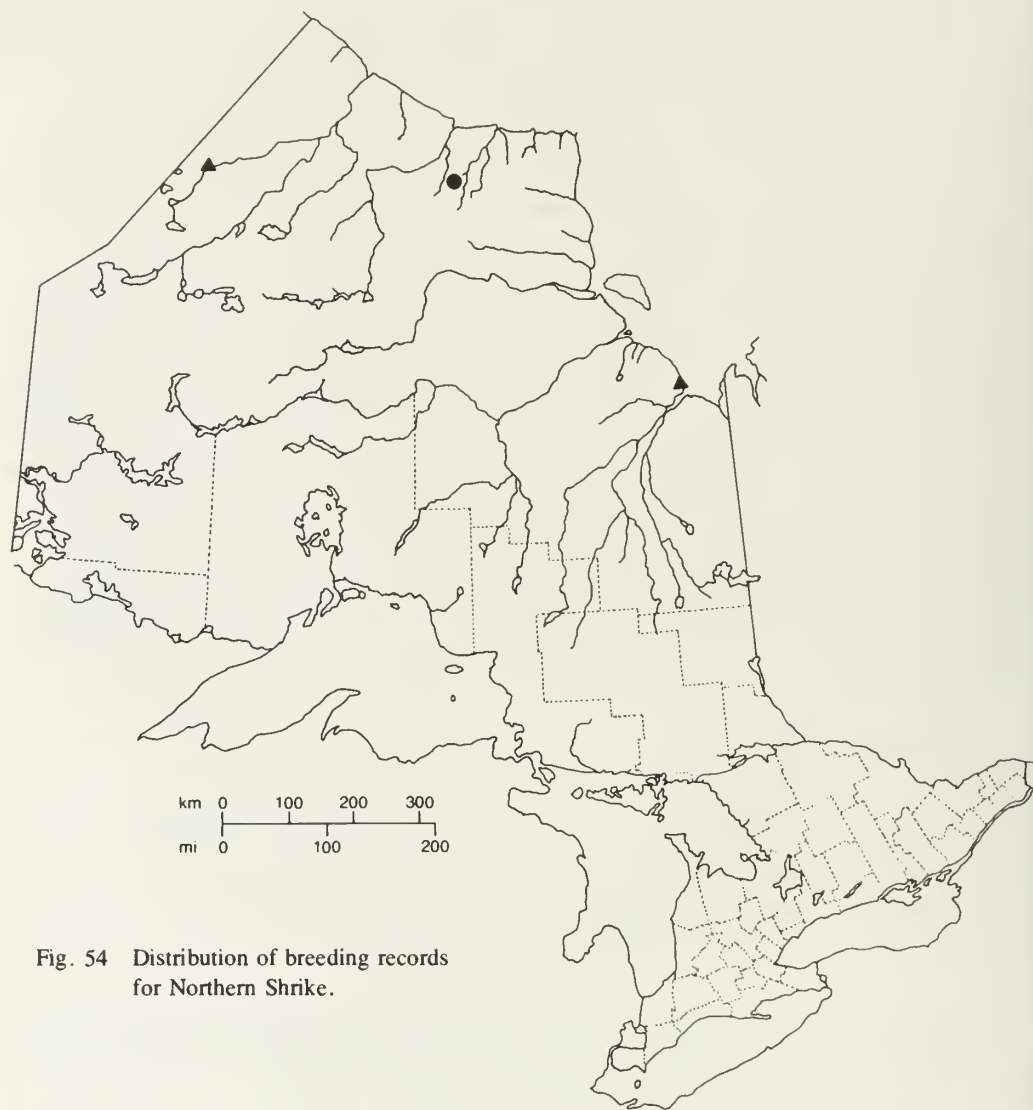


Fig. 54 Distribution of breeding records
for Northern Shrike.

Northern Shrike, *Lanius excubitor* Linnaeus

Nidiology

The suspected breeding of the Northern Shrike in Ontario was confirmed by the collection of an immature male (ROM 139897) at Kiruna Lake near the Sutton Ridges, Kenora District, on 12 July 1981. The collected bird was 1 of 4 young, able to fly, but still with their parents and begging for food.

Breeding Distribution

The summer range of the Northern Shrike (Fig. 205) in Canada was believed to be outside and almost entirely north of Ontario (Godfrey, 1966). However, a few summer sightings subsequently indicated the possibility of a small breeding population in northern Ontario, most likely close to Hudson Bay and near the known range. In 1981 breeding was first confirmed in this area 80 km (50 miles) south of Winisk (James, 1981). Ontario apparently has the most southerly breeding locale known for the species in Canada.

A female with 6 enlarged ova was collected at the mouth of the Moose River in 1972 (Schueler et al., 1974), and at North Point, 30 km (19 miles) north of Moosonee on James Bay, a family group of 5 young was seen in June 1975 (Manning, 1981). Thus, this species probably breeds relatively near to both the Hudson and James bay coasts as far south as Moosonee, but the few reports available give only a rough idea of the full extent of its range.



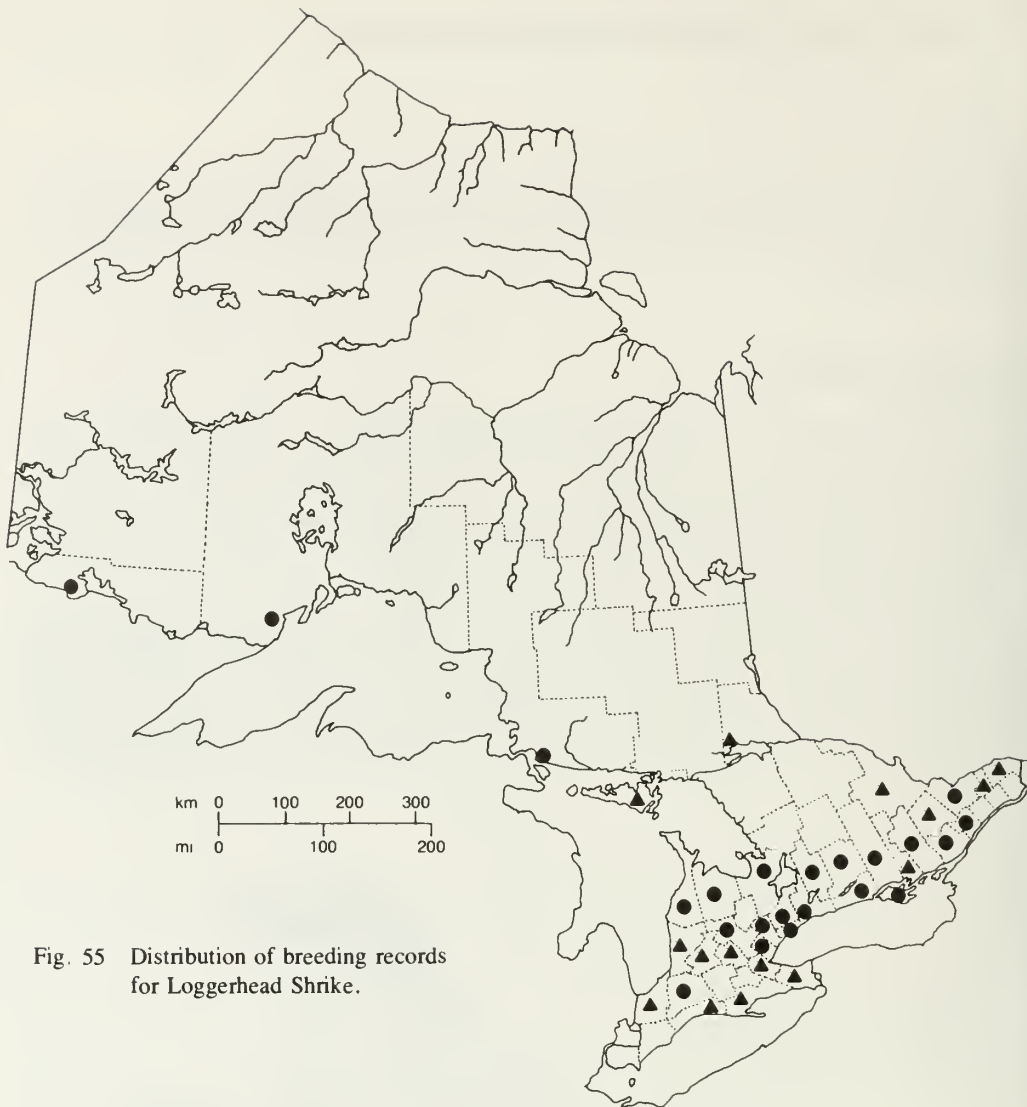


Fig. 55 Distribution of breeding records for Loggerhead Shrike.

Loggerhead Shrike, *Lanius ludovicianus* Linnaeus

Nidiology

RECORDS 230 (231 nests) representing 33 provincial regions.

An inhabitant of open country, this species breeds in agricultural areas in fields, pastures, and old orchards often overgrown by small trees and shrubs, and in fencerows of such growth situated along roadsides or between fields and pastures. Single nests were recorded in a country schoolyard, on a golf course, and in a swampy, mixed woods near some buildings.

Nests were most often positioned in deciduous trees, shrubs, and vines (11 spp., 145 nests), and less often in conifers (3 spp., 20 nests). Hawthorn spp. (114 nests) were greatly preferred over all other tree types combined, with apple (14 nests), spruce spp. (9 nests), cedar spp. (8 nests), and grape vine (either alone or entangled in trees) (8 nests) also occasionally selected. Nests were in crotches and less often on horizontal branches. Most were placed against the main trunk, but some were positioned up to 1.8 m (6 ft) from it. Nests tended to be placed centrally in the nest tree or bush, with a few placed near the top. Heights of 156 nests ranged from 0.3 to 12 m (1 to 40 ft), with 78 averaging 1.7 to 3 m (5.5 to 10 ft).

Nests were described as bulky cups, usually loosely woven, and with deep egg cavities. With few exceptions nest exteriors consisted of sticks and twigs, and in addition, in order of preference, the following: grasses, plant stalks, paper, leaves, animal hair, string, rootlets, cloth, feathers, plant down, plant fibres, bark, mosses, and mud. Linings were often of feathers (1 nest contained 286 feathers), and other lining materials included animal hair, grasses, plant down, artificial stuffing, rootlets, tissue, plant fibres, bark, and pine needles. One nest was unlined. One nest was reused in a succeeding year. Ten nests had outside diameters ranging from 16 to 20 cm (6.3 to 7.9 inches), inside diameters from 8 to 9 cm (3.1 to 3.5 inches), outside depths from 7 to 12 cm (2.7 to 4.7 inches), and inside depths from 5 to 6.5 cm (2 to 2.6 inches).

EGGS 133 nests with 1 to 7 eggs; 1E (6N), 2E (3N), 3E (14N), 4E (22N), 5E (38N), 6E (43N), 7E (7N).

Average clutch range 5 to 6 eggs (81 nests).

INCUBATION PERIOD 4 nests: 1 of at least 12 days, 1 of ca 15 days, 1 of 16 days, 1 of ca 16 days.

EGG DATES 123 nests, 1 April to 5 August (145 dates); 62 nests, 7 May to 22 May. The protracted breeding season indicated the probability of double broods, although none were reported.

Breeding Distribution

The Loggerhead Shrike formerly nested where forests had been cleared in southern Ontario and in northern Ontario in western Rainy River District, near Thunder Bay, and in the area from Sault Ste Marie to North Bay. Its population has declined considerably in the past couple of decades, however, with the result that it is now found only locally in this range and may be absent from the north.

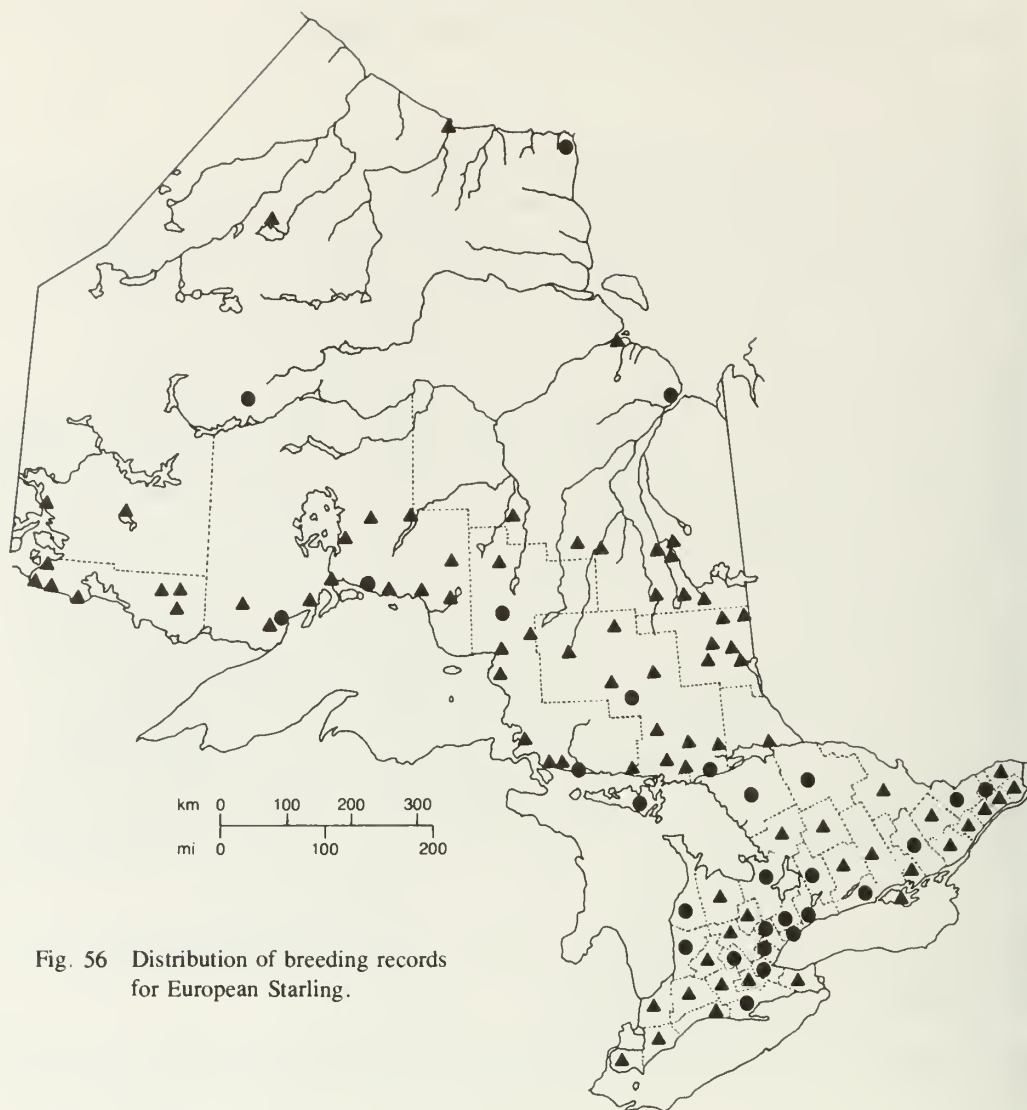


Fig. 56 Distribution of breeding records for European Starling.

European Starling, *Sturnus vulgaris* Linnaeus

Nidiology

RECORDS 2830 (ca 2932 nests) representing all 52 provincial regions.

Breeds in deciduous, mixed, and coniferous woods and swamps (329 nests); in farmland, including fields, pastures, orchards, and gravel pits (304 nests); in urban and rural populated areas, including gardens, streets, cottage areas, campgrounds, cemeteries, and golf courses (241 nests); along roadsides, flood plains, shorelines, and canal edges (117 nests); in beaver ponds, marshes, wet meadows, and muskeg and bog areas (71 nests); at sand dunes and banks (21 nests); and on cliffs (10 nests). One nest was in a building on dry tundra. Dry areas were selected more often than wet, and the number of sites in wet areas only indicated the presence

of dead trees for nesting. Occasionally nests were reported close to each other, approximating a colonial situation (e.g., 5 active nests in the same tree).

With 2 exceptions—a nest in a broken limb on the ground, and a nest in a wooden cable spool on the ground—all nests were elevated in holes and recesses: in trees, stubs, and stumps (972 nests); in bird boxes (557 nests); in buildings (422 nests); in fence posts (290 nests); in mail boxes (134 nests; Fig. 191); in utility and flag poles, and pipes (97 nests); in miscellaneous manmade objects (21 nests); in cliffs and banks (15 nests); in bridges and dams (7 nests); and in raptor nests (3 nests).

Nest trees were both living (444 nests) and dead (317 nests), and deciduous trees (21 spp., 639 nests) were much preferred to coniferous (5 spp., 57 nests). Those selected most often were elm spp. (145 nests), maple spp. (140 nests), apple (92 nests), birch spp. (68 nests), willow spp. (55 nests), and poplar spp. (51 nests). Most tree nests were in natural cavities or old or new woodpecker cavities (92 records—Northern Flicker, Red-headed Woodpecker, Yellow-bellied Sapsucker, and Pileated Woodpecker). Bird houses with holes large enough to permit entry were used. Nests were both outside and inside buildings. Nests were in such manmade objects as signs, radiators, gas tanks, pumps, air vents, air conditioners, and an aircraft; 1 nest was in a boiler tank, half-submerged in a lake with waves often splashing over the nest entrance hole. There were 3 records of nests in Bank Swallow tunnels. One nest was built in the side of a nest of Red-tailed Hawk, another in that of an Osprey, and a third in that of a Bald Eagle. Starling nests were reported in the same trees or multiple-unit nest boxes used concurrently by Ospreys, American Kestrels, Belted Kingfishers, Red-headed Woodpeckers, Northern Flickers, Purple Martins, Tree Swallows, and House Sparrows. Nest locations were often reused and 1 tree cavity site was used for 17 of the 20 years it was under observation. Heights of 913 nests in trees ranged from 0.3 to 23 m (1 to 75 ft), with 457 averaging 2.4 to 9 m (8 to 30 ft); heights of 74 nests in buildings ranged from 1.2 to 18 m (4 to 60 ft), with 37 averaging 2.7 to 6 m (9 to 20 ft). One nest in a sandbank tunnel was at a height of 30.5 m (100 ft).

Nests were variously described as bulky cups, sometimes as deep and sprawling with hidden interiors, and at other times as flat with open bowls. One nest in a barn was built on the floor against a wall and was completely exposed. The size and shape of nests were usually influenced by the size and shape of the cavity in which they were placed. Nest exteriors were of grass/straw, feathers, sticks and twigs, plant stalks, leaves, paper/plastic, string, roots, corn husks, and mud. Their linings, if differentiated, contained feathers, bark, grasses, conifer needles, catkin down, hair, and paper. Some nests (37) were built of grass/straw only, 2 of twigs only, and 1 of feathers only. Diameters of 35 tree nest holes ranged from 5 to 20 cm (2 to 8 inches), with 18 averaging 7.6 to 10 cm (3 to 4 inches). Depths of 100 tree cavities ranged from 5 to 106.7 cm (2 to 42 inches), with 50 averaging 30.5 to 45.6 cm (12 to 18 inches); depths of 52 fence-post cavities ranged from 25.4 to 152.4 cm (10 to 60 inches), with 26 averaging 45.7 to 91.4 cm (18 to 36 inches).

EGGS 278 nests with 1 to 10 eggs; 1E (7N), 2E (10N), 3E (29N), 4E (78N), 5E (96N), 6E (41N), 7E (10N), 8E (6N), 10E (1N).

Average clutch range 4 to 5 eggs (174 nests).

One nest contained 9 young. Eggs were usually laid at daily intervals, but intervals of 2 and 3 days were reported.

INCUBATION PERIOD 23 nests, 10 to 15 days, with 12 averaging 11 to 13 days: 2 of 10 days, 8 of 11 days, 2 of ca 11 days, 3 of 12 days, 1 of at least 12 days, 6 of 13 days, 1 of 15 days.

The variation in incubation length, together with a prolonged hatching period of 4 days at 1 nest, suggested that incubation sometimes commenced before the last egg was laid.

EGG DATES 278 nests, 26 March to 19 July (364 dates); 139 nests, 8 May to 24 May. A nest containing young on 10 March indicated an earlier egg date than any reported. Renestings (2 at 1 nest) and double broods were both reported.

Breeding Distribution

The European Starling breeds throughout Ontario, mainly in farmlands and urban centres.

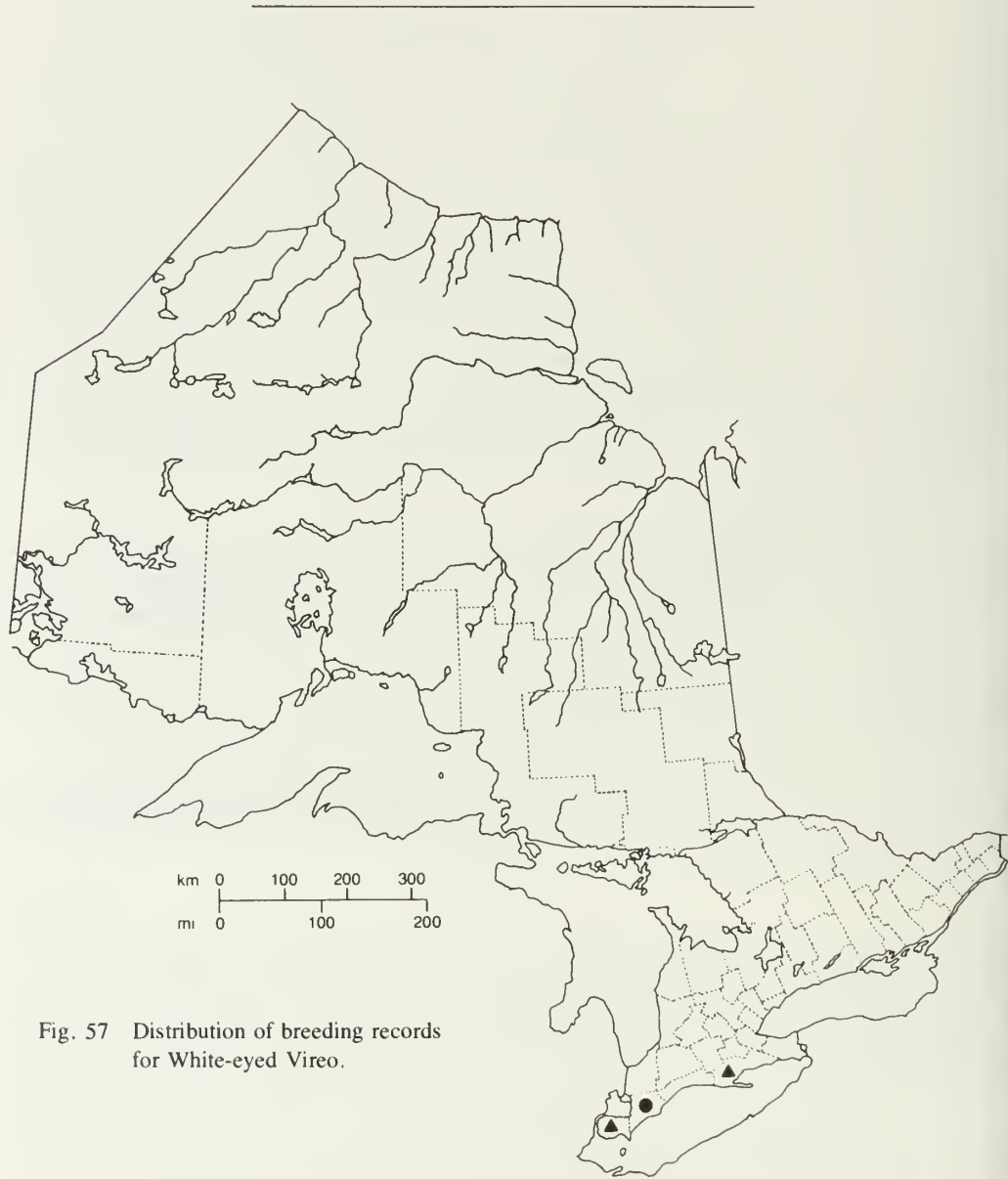


Fig. 57 Distribution of breeding records for White-eyed Vireo.

White-eyed Vireo, *Vireo griseus* (Boddaert)

Nidiology

RECORDS 6 nests representing 3 provincial regions.

The White-eyed Vireo is a breeding species of the Deciduous Forest region. A total of 6 nests has been reported in extreme southwestern Ontario near Lake Erie. Nests were in deciduous woods (2 nests), in open mixed scrub on a beach area (2 nests), in a dense tamarack stand near a marsh (1 nest), and beside a road near an open savannah (1 nest).

Nests were found in the following trees and shrubs: oak sp. sapling, chokecherry, gray dogwood, raspberry, tamarack, and white pine. They were suspended from forks of branches at the following heights: 0.6, 0.6, 0.9, 1.2, 1.8, and 1.8 m (2, 3, 4, and 6 ft).

Nests were deep, pensile cups, and 1 was noted to be well concealed. They were composed of small twigs, grasses, leaves, pine needles, string, paper, spider cocoons and webs, plant stalks, bits of wasp paper, mosses, and winged seeds. Two nests had outside diameters of 6.5 and 7 cm (2.6 and 2.7 inches), inside diameters of 4.5 and 4.5 cm (1.8 inches), outside depths of 6.5 and 7 cm (2.6 and 2.7 inches), and inside depths of 4 and 4 cm (1.6 inches).

EGGS Contents of the 6 nests were as follows: 1 with 2 eggs and 1 cowbird egg; 1 with 1 cowbird egg only; 1 with 2 young; 1 with 1 young; and 2 empty nests under construction.

Cowbird parasitism 4 nests with 2 parasitized (50%).

INCUBATION PERIOD No information.

EGG DATES 1 nest, 7 June and 11 June (2 dates).

Breeding Distribution

Although Macoun and Macoun (1909) describe a nesting record for the White-eyed Vireo in Toronto in 1898, there is considerable doubt about the validity of this record, and the same is true of an 1890 nest record from Welland County (Niagara RM) cited in Beardslee and Mitchell (1965). Baillie and Harrington (1937) did not include this species in their list of breeding birds of Ontario. There were no other nesting records for the province until 1971 (Peck, 1976). In that year W. A. Rayner found 2 nests in Rondeau Provincial Park. Subsequently, nests have been found in Essex County and in Haldimand-Norfolk RM. There now appears to be a small population each summer in the southern Deciduous Forest region which is probably still expanding slowly northwards.

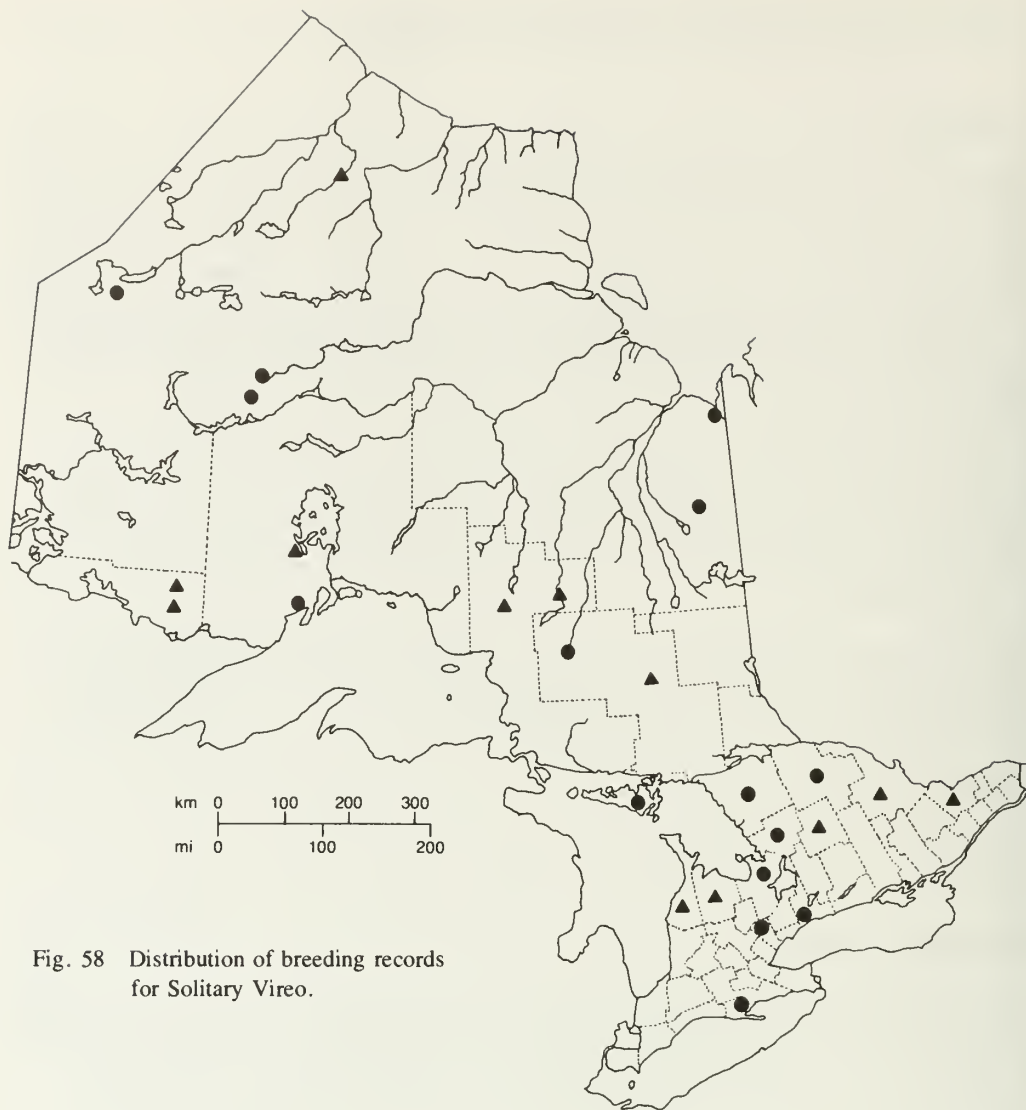


Fig. 58 Distribution of breeding records for Solitary Vireo.

Solitary Vireo, *Vireo solitarius* (Wilson)

Nidiology

RECORDS 62 nests representing 18 provincial regions.

Breeds usually in wooded areas, with mixed (27 nests) and coniferous (14 nests) stands preferred to deciduous (3 nests). Only 2 nests were in open areas (a dry rock ridge and an overgrown pasture). A number of nests were near water, which may have only indicated the availability of coniferous trees in wet situations.

Nests were almost invariably in living trees (1 was in a dead white cedar), and coniferous trees (6 spp., 47 nests) were greatly favoured over deciduous (5 spp., 7 nests). Nest trees most frequently selected were balsam fir (25 nests), spruce spp. (8 nests), and hemlock (7 nests). Nests were suspended from horizontal branches, more often near the tip of the branch than adjacent to the trunk. Distances from the trunk of 16 nests ranged from 0.07 to 3 m (0.25 to 10 ft), with 8 averaging 0.3 to 1.8 m (1 to 6 ft). Small trees and saplings (31 nests) were selected more often than large trees (15 nests), and nests were more frequently placed near the tops of small trees than in the lower branches of large trees. Heights of 51 nests ranged from 0.9 to 11 m (3 to 36 ft), with 25 averaging 2 to 4.3 m (7 to 14 ft).

Nests were pendant cups whose exteriors were characteristically formed of bark strips (often birch spp.), insect silk and spider webs, and many were decorated with lichens. Exterior nest materials, in order of preference, were bark strips, insect silk and spider webs, lichens, grasses, plant down, wasp nests, twigs, wood pieces, plant fibres, leaves, and paper. Linings were almost invariably of fine grasses, and 2 nest linings contained fine rootlets. Nine nests had outside diameters ranging from 7 to 9 cm (2.8 to 3.5 inches), inside diameters of 4.5 to 5.7 cm (1.8 to 2.2 inches), outside depths of 5.5 to 8 cm (2.2 to 3.1 inches), and inside depths of 3 to 5 cm (1.2 to 2 inches).

EGGS 37 nests, with 2 to 5 eggs; 2E (1N), 3E (5N), 4E (29N), 5E (2N).

Average clutch range 4 eggs (29 nests).

Cowbird parasitism 44 nests with 2 parasitized (4.5%).

INCUBATION PERIOD 4 nests: 2 of 13 days, 2 of 14 days.

EGG DATES 33 nests, 18 May to 5 August (51 dates); 17 nests, 3 June to 18 June.

Breeding Distribution

The Solitary Vireo breeds across the province, somewhat farther north than Big Trout Lake and Fort Albany, and regularly as far south as Haliburton County and Ottawa-Carleton RM. The species has recently been found nesting south to Haldimand-Norfolk RM in isolated patches of suitable habitat.

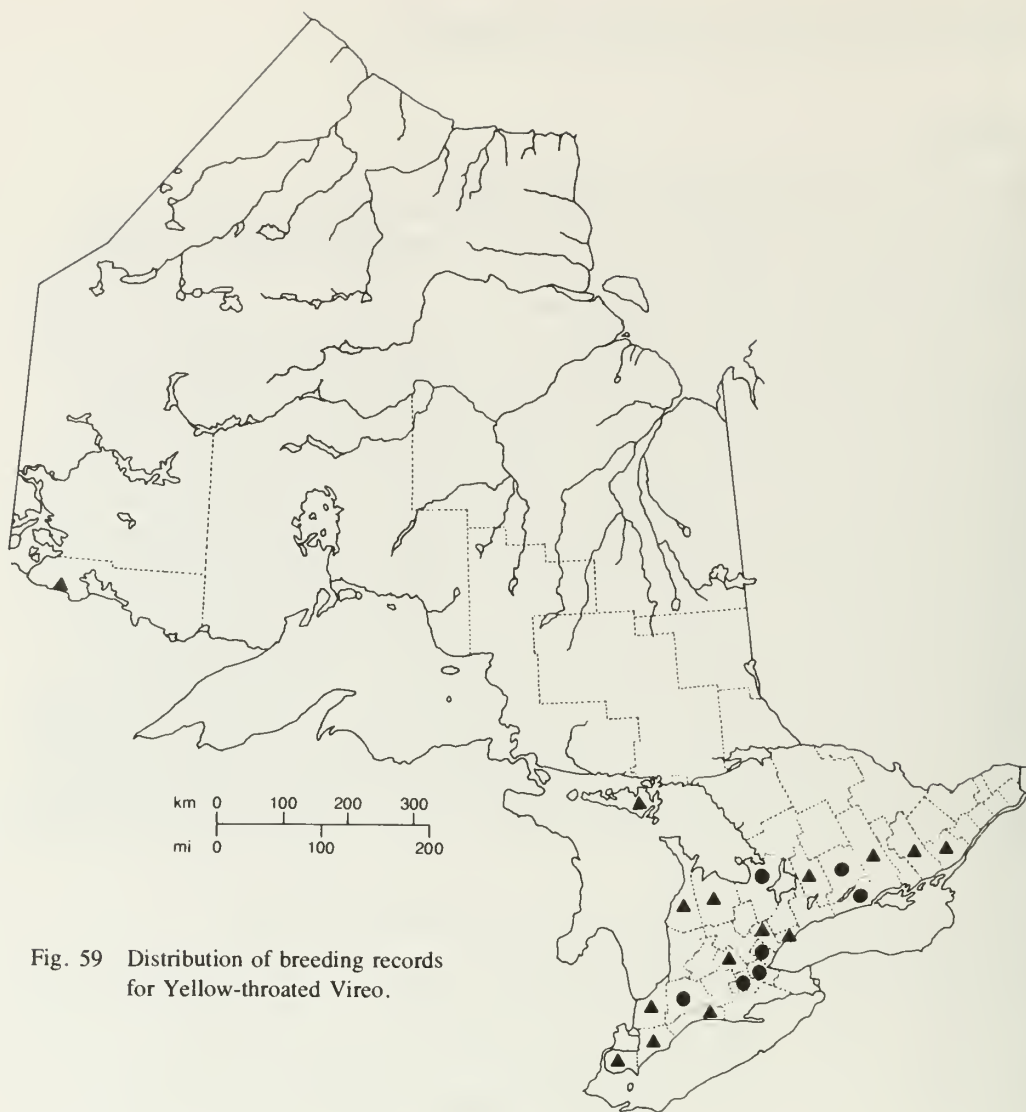


Fig. 59 Distribution of breeding records for Yellow-throated Vireo.

Yellow-throated Vireo, *Vireo flavifrons* Vieillot

Nidiology

RECORDS 82 nests representing 19 provincial regions.

Breeds in deciduous and mixed woods, usually more open than dense, and often near clearings or edges (28 nests); in wet areas such as swamps and beaver ponds with scattered trees (24 nests); in treed fencerows and roadsides, on stream edges, and in aspen/poplar groves (17 nests); and in treed village streets and campus parking lots (2 nests).

Nests were placed invariably in deciduous trees (10 spp., 73 nests) which were usually living (1 dead), and large, mature trees were greatly preferred. Nest trees chosen most often were maple spp. (29 nests), poplar spp. (15 nests), oak spp. (9 nests), and elm spp. (8 nests). Two trees were noted to have a DBH of 40.6 cm (16 inches), and another a DBH of 35.5 cm (14 inches). Nests were suspended, usually from forks of relatively horizontal branches, and their positions varied from the centre of the tree crown near the trunk (44 nests) to the ends of branches at the tree periphery (13 nests). Distances from the trunk of 23 nests ranged from 0.3 to 3 m (1 to 10 ft), with 11 averaging 0.6 to 1.2 m (2 to 4 ft). Heights of 78 nests ranged from 1.2 to 24 m (4 to 80 ft), with 39 averaging 7.5 to 13.5 m (25 to 45 ft).

Nests were pendant, pouchlike cups whose exteriors were formed of bark strips (less birch bark than used by Red-eyed and Solitary vireos), insect silk and spider webs and egg cases, lichens, grasses, leaves, hair, rootlets, mosses, plant down, hornet nest paper, and pine needles. Exterior nest material was characteristically held in place by silk and webs, and nests were decorated with spider egg cases and lichens. Linings were of fine grasses, and occasionally of fine rootlets and bark strips also. Seven nests had outside diameters ranging from 6 to 8 cm (2.4 to 3.1 inches), inside diameters from 4.5 to 5.5 cm (1.8 to 2.2 inches), outside depths from 6 to 7 cm (2.4 to 2.8 inches), and inside depths from 4 to 5 cm (1.6 to 2 inches).

EGGS 38 nests with 1 to 4 eggs; 1E (2N), 2E (1N), 3E (15N), 4E (20N).

Average clutch range 4 eggs (20 nests).

With the exception of 3 clutches with 3 eggs, all the 1-, 2-, and 3-egg clutches contained cowbird eggs, which may have influenced the clutch size.

Cowbird parasitism 44 nests with 22 parasitized (50%).

INCUBATION PERIOD 4 nests: 2 of 12 days, 1 of 14 days, and 1 of at least 14 days.

EGG DATES 35 nests, 21 May to 15 July (47 dates); 17 nests, 4 June to 14 June.

Breeding Distribution

The Yellow-throated Vireo breeds regularly in southern Ontario as far north as Simcoe, Peterborough, and Leeds counties, probably somewhat farther, and also rarely on Manitoulin Island and near Sault Ste Marie. In northern Ontario, the only location where it is found regularly is in western Rainy River District, although it has been recorded in the Kenora area.

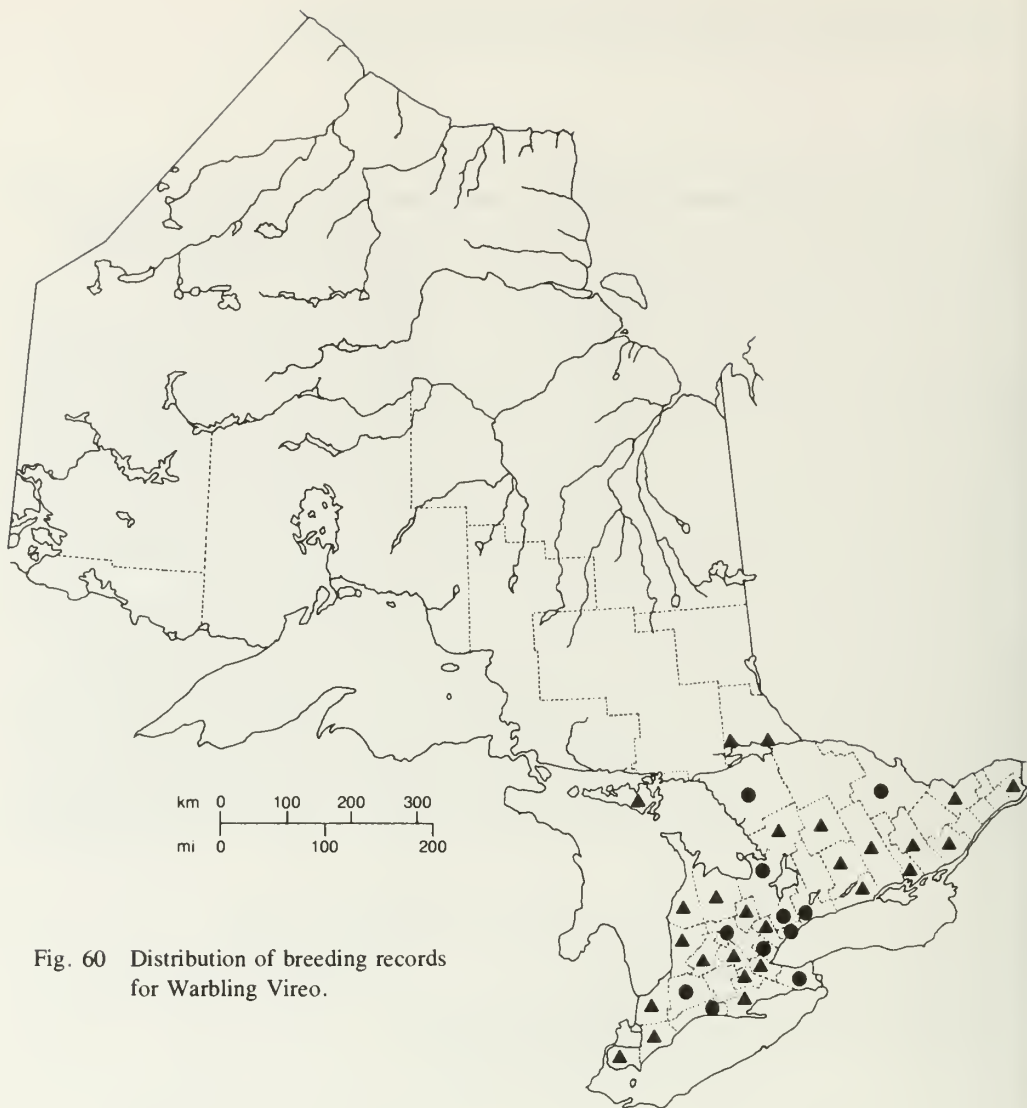


Fig. 60 Distribution of breeding records for Warbling Vireo.

Warbling Vireo, *Vireo gilvus* (Vieillot)

Nidiology

RECORDS 143 (144 nests) representing 33 provincial regions.

Breeds in mixed and deciduous woodlands (55 nests), most often at their edges or at openings (36 nests); in urban parks and gardens (17 nests); in open farmland and in farm fencerows (13 nests); and in an aspen clump in a pine plantation (1 nest). In wooded areas the preference for open sites near the nest was made obvious by the number of nest locations near roadsides, pond and river shores, swamp and marsh openings, beaver ponds, and cottage clearings.

Nests were invariably elevated in deciduous trees and shrubs (16 spp., 116 nests), and those most commonly selected were poplar spp. (40 nests), maple spp. (38 nests), elm spp. (7 nests), birch spp. (6 nests), and oak spp. (6 nests). At one location 2 nests were reported in the same tree. Nests were suspended from crotches of lateral limbs, and more often toward the end of the limb and the periphery of the tree than close to the trunk in a central location. Distances from the trunk of 27 nests ranged from 0.3 to 6 m (1 to 20 ft), with 14 averaging 1.2 to 3 m (4 to 10 ft). Heights of 118 nests ranged from 1.4 to 18 m (4.5 to 60 ft), with 59 averaging 6 to 9 m (20 to 30 ft).

Nests were pendant, woven, neat cups whose exteriors were festooned with insect and spider silk and cocoons, paper and string, and bits of birch bark. Exterior walls were composed of grasses, plant fibres, bark strips, plant down, hair, leaves, fine twigs, lichens, and rootlets. Linings were of fine grasses, pine needles, plant fibres, rootlets, feathers, and leaves. Eight nests had outside diameters ranging from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4.5 to 5 cm (1.8 to 2 inches), outside depths from 5 to 7 cm (2 to 2.8 inches), and inside depths from 3.5 to 4.5 cm (1.4 to 1.8 inches).

EGGS 50 nests with 1 to 4 eggs; 1E (1N), 2E (8N), 3E (18N), 4E (23N).

Average clutch range 3 to 4 eggs (41 nests).

Cowbird parasitism 55 nests with 6 parasitized (10.9%).

INCUBATION PERIOD 3 nests: 1 of 13 days, 1 of 14 days, 1 of ca 14 days.

EGG DATES 50 nests, 20 May to 5 July (58 dates); 25 nests, 4 June to 12 June.

Breeding Distribution

The Warbling Vireo breeds throughout southern Ontario. In the north it is found in summer between Sault Ste Marie and Sudbury, and also in the Lake of the Woods and Thunder Bay areas, where specific records are currently lacking.

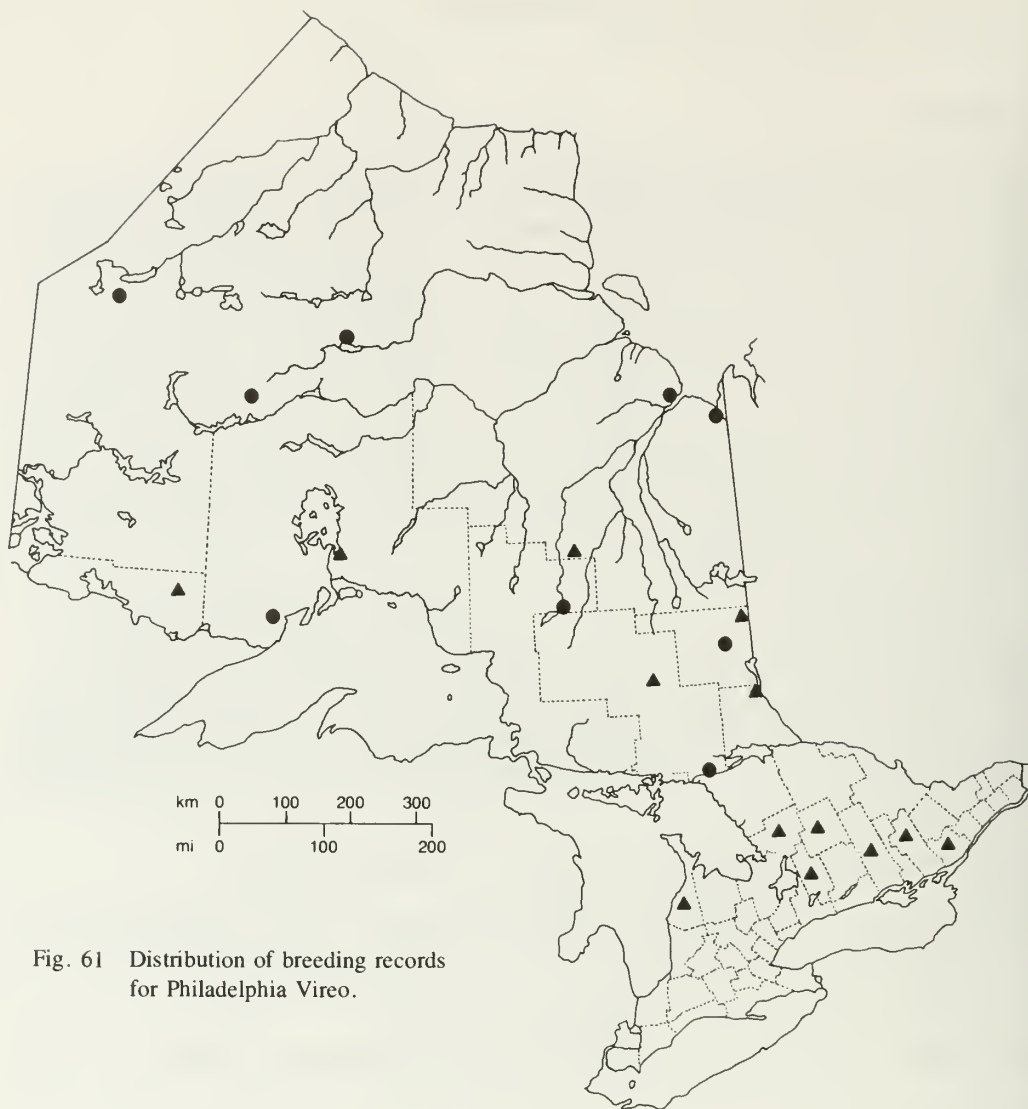


Fig. 61 Distribution of breeding records for Philadelphia Vireo.

Philadelphia Vireo, *Vireo philadelphicus* (Cassin)

Nidiology

RECORDS 40 nests representing 8 provincial regions.

Breeds most often in deciduous (poplar spp. and sometimes birch spp.) woods (25 nests; Fig. 157), less often in mixed (poplar spp. and spruce spp.) woods (6 nests), and sometimes in alder thickets that often contained willow and dogwood spp. (4 nests). The wooded areas frequently had understories of alder. One nest was recorded in a southern deciduous wood of maple and other species.

Nests were usually in trees (28 nests), and occasionally in shrubs or bushes (8 nests). Most nests were suspended from horizontal forks of lateral branches. Their positions varied from very near the trunk to as far as 1.5 m (5 ft) from it. Two nests were noted to be at the periphery of large aspen trees. All nest trees and shrubs were deciduous, with poplar spp. (26 nests), alder spp. (9 nests), birch sp. (1 nest), and maple sp. (1 nest) being those selected. Heights of 41 nests ranged from 1.8 to 21 m (6 to 70 ft), with 21 averaging 3 to 15 m (10 to 50 ft).

Nests were woven, pendant cups, composed of bark strips (often birch), grasses, plant stalks and fibres, insect and spider silk and egg cases, lichens (usnea), and plant down. They were lined with grasses, plant down, feathers, and pine needles. Ten nests had outside diameters ranging from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4.5 to 5 cm (1.8 to 2 inches), outside depths from 5.5 to 10 cm (2.2 to 3.9 inches), and inside depths from 3.5 to 6 cm (1.4 to 2.4 inches).

EGGS 11 nests with 2 to 4 eggs; 2E (1N), 3E (3N), 4E (7N).

Average clutch range 4 eggs (7 nests).

Cowbird parasitism 13 nests with 2 parasitized (15.5%).

INCUBATION PERIOD 1 nest, 11 to 13 days.

Hatching of the first egg occurred 11 days after the laying of the last egg, and hatching of the last egg was 13 days after the laying of the last egg. It seems probable, therefore, that incubation commenced before the last egg was laid, possibly due to cold and inclement weather.

EGG DATES 9 nests, 13 June to 25 July (12 dates); 5 nests, 18 June to 23 June.

Breeding Distribution

The Philadelphia Vireo (Fig. 158A) breeds mainly across northern Ontario, as far north as Big Trout Lake and Fort Albany. It seldom breeds in southern Ontario, but occasionally as far south as northern Bruce, central Hastings, and Leeds counties.

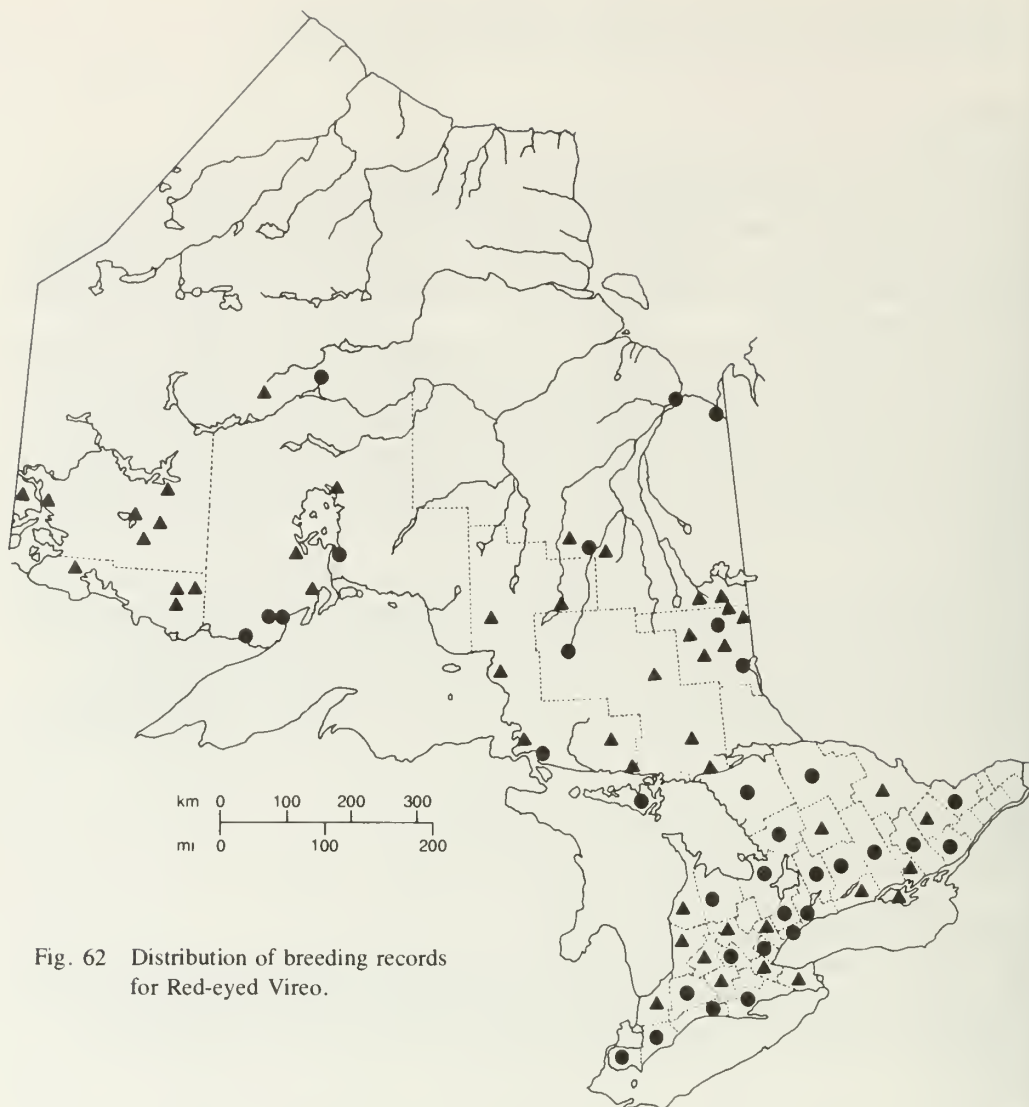


Fig. 62 Distribution of breeding records for Red-eyed Vireo.

Red-eyed Vireo, *Vireo olivaceus* (Linnaeus)

Nidiology

RECORDS 490 nests representing 44 provincial regions.

Breeds equally in deciduous (130 nests) and mixed (129 nests) woodlands, and occasionally in coniferous stands (5 nests); in gardens, cottage areas, campgrounds, and parks (40 nests); in overgrown fields and thickets (12 nests); in overgrown rocky outcroppings (11 nests); in alder swamps and willow swales (4 nests); on road right-of-ways (3 nests); in mine clearings (1 nest); and in treed sand-dune areas (1 nest). Woodlands were both second-growth, open stands and mature, closed stands, and many nests were at edges and shorelines, and near roads and paths.

Nests were elevated in living trees and shrubs, with deciduous (22 spp., 392 nests) greatly favoured over coniferous (5 spp., 45 nests). The tree types most commonly selected were predominantly maple spp. (165 nests), and less often birch spp. (40 nests), poplar spp. (34 nests), oak spp. (24 nests), alder spp. (24 nests), and white cedar (18 nests). Small or sapling trees and bushes were chosen for nests more often than large trees. The DBH of 4 trees were 3.8, 5, 7.6, and 30.5 cm (1.5, 2, 3, and 12 inches). Nests were suspended by their rims, usually from Y-shaped forks of horizontal branches, and were far more frequently away from the main trunk (often at the end of the limb) than near it. Distances of 43 nests from the trunk ranged from 0.3 to 6 m (1 to 20 ft), with 21 averaging 1.1 to 2.4 m (3.5 to 8 ft). Nests were usually well hidden, with only 3 reports of exposed nests, and 1 of these was due to insect defoliation of the nest tree. There were 3 reports of 2 nests of this species which were 15, 18, and 30 m (50, 60, and 100 ft) apart. Heights of 367 nests ranged from 0.5 to 21 m (1.5 to 70 ft), with 184 averaging 1.8 to 3.7 m (6 to 12 ft).

Nests were durable, woven, pendant cups, with relatively deep bowls and thin walls. Exteriors were characteristically formed of bark strips (usually white birch), grasses, and plant fibres, and were often bound and festooned with spider webs and egg cases, and insect silk. Other outer materials were pine needles, leaves, plant down, small twigs and wood pieces, mosses and lichens, paper from wasp and hornet nests, plastic/paper/string, rootlets, hair, flower petals, and mud. Linings were of fine grasses, pine needles, bark strips, plant fibres, rootlets, plant down, feathers, paper, and hair. Building materials were sometimes taken from old or inactive vireo nests. Thirteen nests had outside diameters ranging from 5.7 to 8.5 cm (2.3 to 3.3 inches), inside diameters from 3.9 to 5.5 cm (1.5 to 2.2 inches), outside depths from 5 to 7.5 cm (2 to 3 inches), and inside depths from 3.5 to 5.7 cm (1.4 to 2.2 inches).

EGGS 174 nests with 1 to 6 eggs; 1E (9N), 2E (21N), 3E (80N), 4E (61N), 5E (2N), 6E (1N).

Average clutch range 3 to 4 eggs (141 nests).

Only non-parasitized clutches were used to record clutch sizes.

Cowbird parasitism 354 nests with 136 parasitized (38.4%) (Fig. 204A).

One nest contained 6 cowbird eggs only, and another contained 6 cowbird eggs and 2 eggs of the Red-eyed Vireo. In 1 nest, 2 of 3 cowbird eggs were buried in the bottom of the nest; in another nest a single cowbird egg was buried.

INCUBATION PERIOD 15 nests, 11 to 15 days: 1 of 11 days, 9 of 12 days, 4 of 13 days, 1 of 15 days.

EGG DATES 272 nests, 26 May to 10 August (307 dates); 136 nests, 14 June to 1 July. Renestings were reported and double broods may occasionally occur.

Breeding Distribution

The Red-eyed Vireo breeds throughout Ontario at least as far north as Big Trout Lake and Fort Albany.

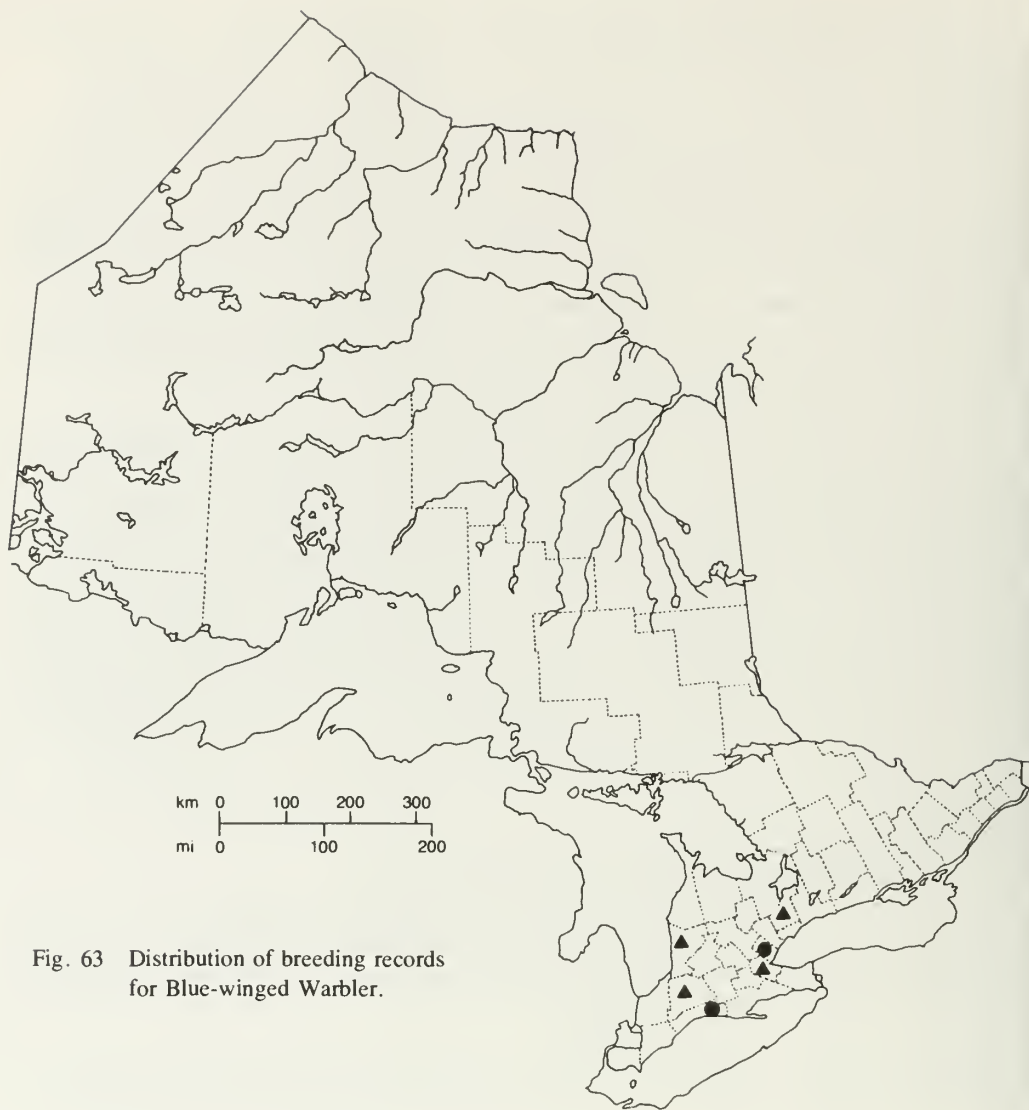


Fig. 63 Distribution of breeding records for Blue-winged Warbler.

Blue-winged Warbler, *Vermivora pinus* (Linnaeus)

Nidiology

RECORDS 7 nests representing 4 provincial regions.

Nests of this southern warbler have been discovered in Ontario on only 7 occasions, only in Halton RM, where it hybridizes freely with the more common and widespread Golden-winged Warbler, and in Elgin, Huron, and Middlesex counties. At 5 of the nests both adults were Blue-winged Warblers; at a sixth nest there was a blue-winged female with a hybrid (Brewster's) male; and at a seventh nest a blue-winged female with a golden-winged male. At a nest containing 4 eggs (not otherwise considered in this account), both adults were hybrids (Brewster's).

Breeding habitats were near the edges of mixed or deciduous tree stands, or were in open, treed localities. Three nests were near wet areas. These habitats were grass-covered (one had sedges and grasses), and were overgrown with shrubs and small trees (hawthorn spp., apple, and planted conifers).

Nests were invariably on the ground among grasses. One nest was adjacent to goldenrod stalks, one was in a clump of goldenrod, and another was at the base of a small dead sapling. Nests were bulky cups with loose exteriors composed of deciduous leaves, wide strips from plant stalks, grasses, bark strips (birch in 1 nest), and rootlets. Linings were characteristically of fine rootlets with the occasional inclusion of fine grasses and bark shreds. Three nests had outside diameters of 11, 12, and 12 cm (4.3 and 4.7 inches), inside diameters of 5.25, 5.5, and 5.5 cm (2.1 and 2.2 inches), outside depths of 6, 8, and 14 cm (2.4, 3.1, and 5.5 inches), and inside depths of 3, 5, and 6 cm (1.2, 2, and 2.4 inches).

EGGS 3 nests, 2 eggs, 4 eggs, and 6 eggs (a fourth nest contained only cowbird eggs, a fifth contained 3 young, and a sixth contained 5 young).

Cowbird parasitism 6 nests with 2 parasitized (33.3%).

INCUBATION PERIOD No information.

EGG DATES 2 nests, 4 June and 18 June.

Breeding Distribution

The Blue-winged Warbler is a relatively recent addition to the list of Ontario breeding birds. The first nest was discovered only in 1956 (Gunn, 1956; Baillie, 1963). Since that time it has continued to breed sparingly, but has remained of rather local occurrence in a few southern regions north to Huron County and east to Kingston in Frontenac County where it has been seen in summer.

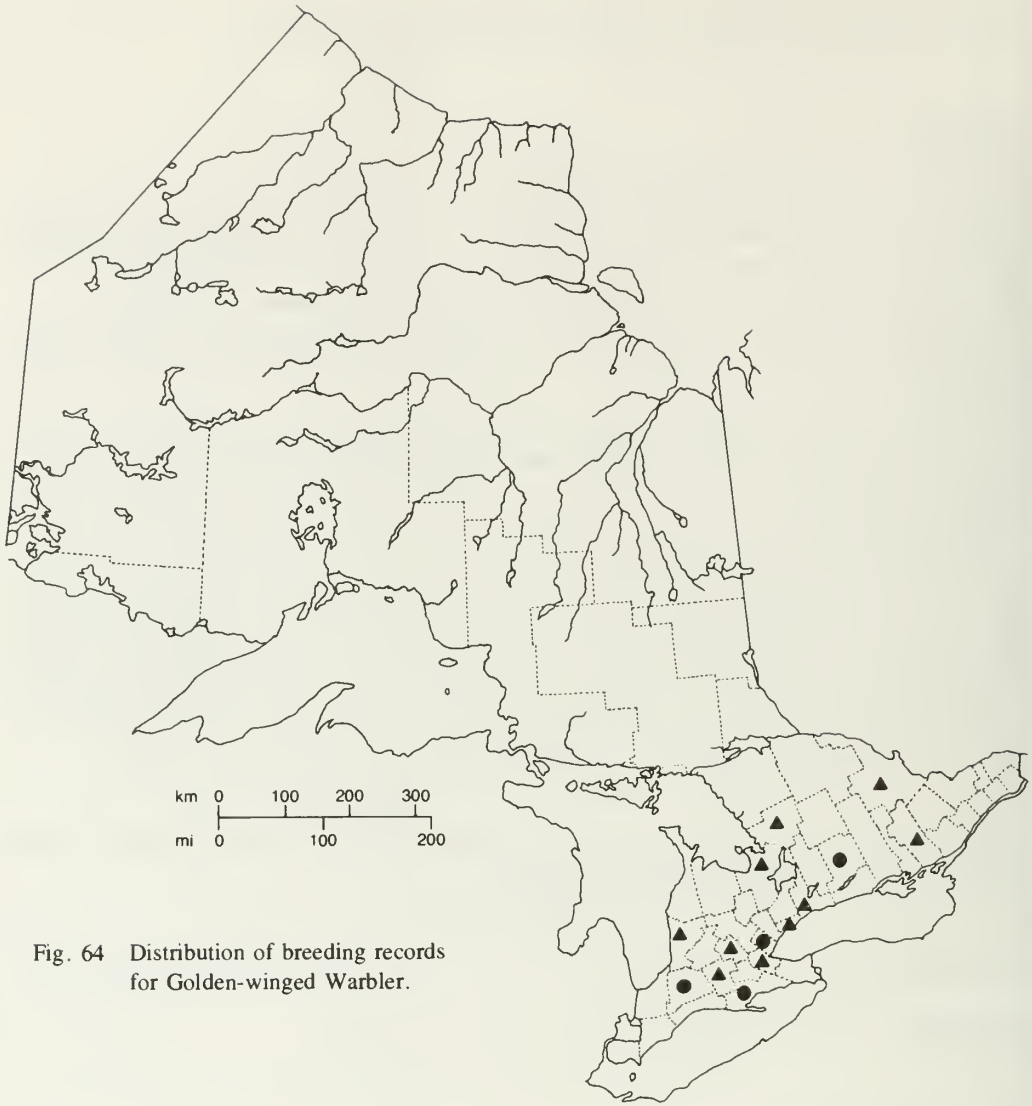


Fig. 64 Distribution of breeding records for Golden-winged Warbler.

Golden-winged Warbler, *Vermivora chrysoptera* (Linnaeus)

Nidiology

RECORDS 33 nests representing 10 provincial regions.

Breeds in fields of tall grasses and weeds overgrown with briars, shrubs, and small trees; in or at the edges of open conifer plantations; in overgrown clearings and edges of deciduous and mixed woods; near roadsides and hedgerows; and at the edges of wet areas of alder growth and an alder/willow/dogwood swamp. Habitats were usually dry, but occasionally wet (3 nests).

This species hybridizes freely with the less common Blue-winged Warbler in habitats where both occur, and breeding habitat selection may be influenced as a result. Two nests each had a golden-winged female mated with a blue-winged male.

Nests were usually on the ground, but 6 nests were somewhat elevated in supporting vegetation to heights ranging from 7.5 to 30.5 cm (3 to 12 inches). Nests were concealed in clumps of tall grasses and other plant stalks (4 nests in goldenrod), and were often at the base of seedling trees and shrubs (14 nests). One nest was hidden in leaves of skunk cabbage. An active nest was situated 6 m (20 ft) from an active nest of Rufous-sided Towhee.

Nests were bulky, woven cups with loose exteriors of deciduous leaves, with added bark strips, wide strips from plant stalks, grasses and plant stalks, and in 1 nest, basswood seed stems. Linings were of fine rootlets, fine grasses, bark shreds, pine needles, and plant stalk strips. Five nests had outside diameters ranging from 8 to 13.5 cm (3.1 to 5.3 inches), inside diameters from 5 to 6.5 cm (2 to 2.6 inches), outside depths from 6.5 to 8.5 cm (2.6 to 3.3 inches), and inside depths from 4 to 5 cm (1.6 to 2 inches).

EGGS 27 nests with 2 to 5 eggs; 2E (4N), 3E (3N), 4E (13N), 5E (7N).

Average clutch range 4 to 5 eggs (20 nests).

Cowbird parasitism 32 nests with 13 parasitized (40.6%).

INCUBATION PERIOD 1 nest, at least 12 days.

EGG DATES 20 nests, 20 May to 3 July (23 dates); 10 nests, 30 May to 16 June.

Breeding Distribution

Although the Golden-winged Warbler has been nesting in the province for more than a century, it has increased in numbers and expanded its range northwards in relatively recent times. In the late 1930s it was reported breeding only in Middlesex and Norfolk counties, with sightings north to Simcoe and Durham counties (Baillie and Harrington, 1937). Today it is found throughout southern Ontario and as far north as Sudbury.

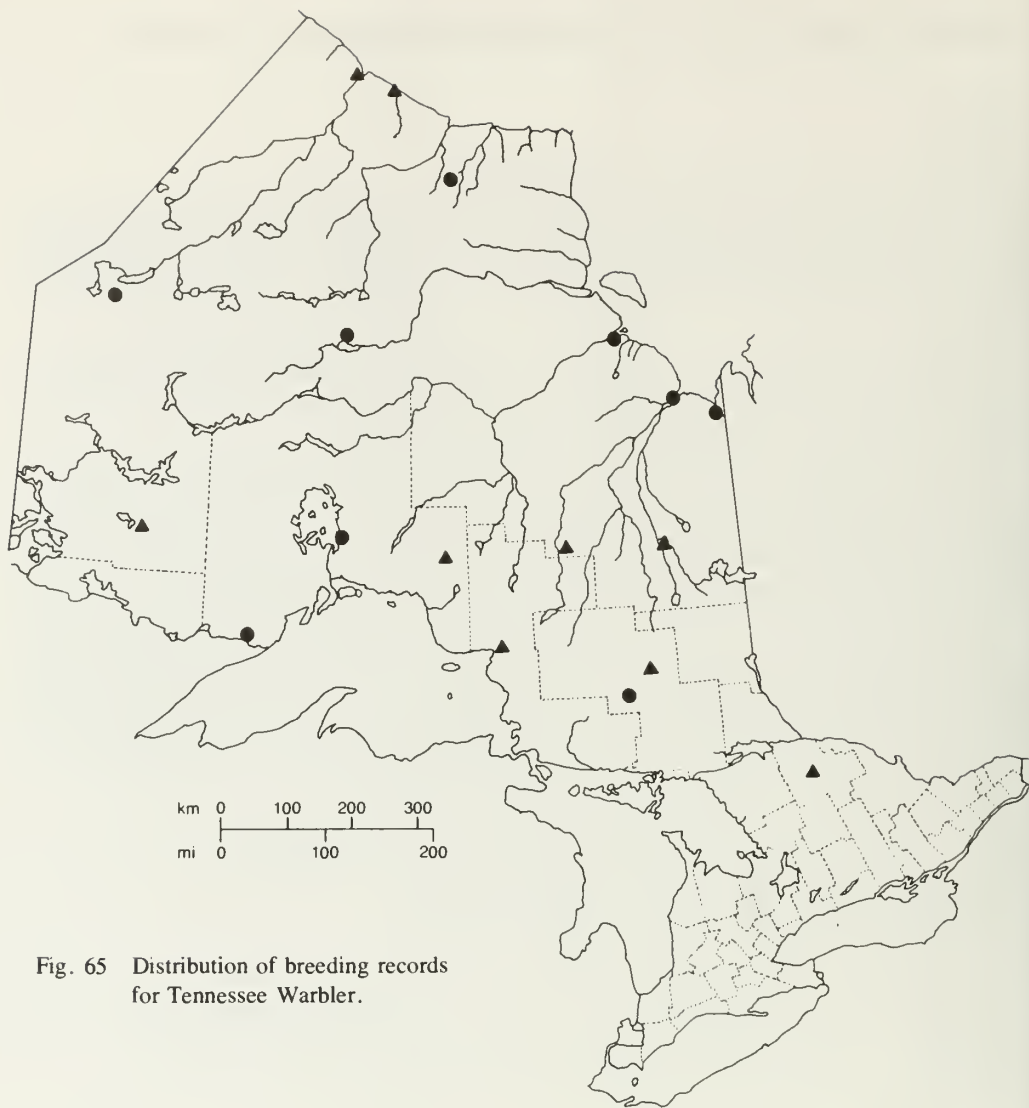


Fig. 65 Distribution of breeding records for Tennessee Warbler.

Tennessee Warbler, *Vermivora peregrina* (Wilson)

Nidiology

RECORDS 20 nests representing 5 provincial regions.

Breeds usually in wet areas such as sphagnum bogs, with black spruce characteristically present, and less often alder, tamarack, and poplar. One nest was in a wet area of willow scrub with a few taller poplars. Four nests were in dry situations, 2 in black spruce woods, 1 in a jack pine/spruce stand on a rocky outcrop, and 1 in an area of jack pine reforestation.

Nests were almost invariably placed in hollows in hummocks of sphagnum moss (16 nests). One nest was at the base of a grass tuft, and 2 nest positions were not specified. Other nests were noted to be under Labrador tea (2 nests), at the base of an alder (1 nest), and under an alder branch (1 nest). Two sphagnum hollows were noted to be 4 and 7 cm (1.6 and 2.8 inches) in length, from their entrance to the rim of the nest.

Nests were cup-shaped structures of grasses and sedges, lined with fine grasses and occasionally with rootlets and deer hair. Outside diameters of 14 nests ranged from 7 to 9 cm (2.8 to 3.5 inches); inside diameters of 14 nests ranged from 4 to 5.5 cm (1.6 to 2.2 inches); outside depths of 9 nests ranged from 3 to 4.5 cm (1.2 to 1.8 inches); inside depths of 14 nests ranged from 1.5 to 4 cm (0.6 to 1.6 inches).

EGGS 19 nests with 4 to 7 eggs; **4E** (6N), **5E** (5N), **6E** (7N), **7E** (1N).

Average clutch range 4 to 6 eggs (18 nests).

INCUBATION PERIOD No information.

EGG DATES 14 nests, 8 June to 21 July (13 dates); 7 nests, 10 June to 24 June.

Breeding Distribution

The Tennessee Warbler breeds throughout northern Ontario, and occasionally ranges into southern Ontario, but south only to about the latitude of Algonquin Park.



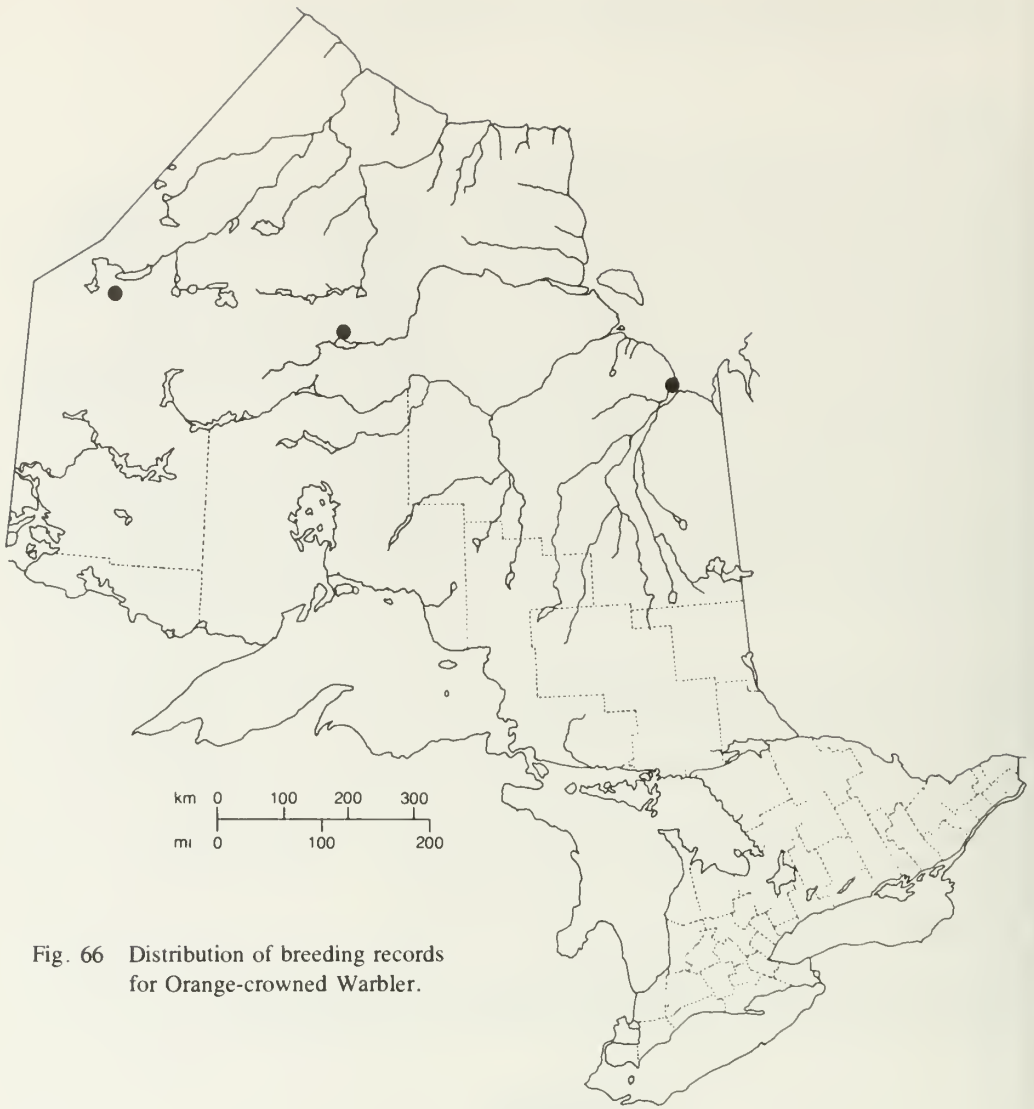


Fig. 66 Distribution of breeding records for Orange-crowned Warbler.

Orange-crowned Warbler, *Vermivora celata* (Say)

Nidiology

RECORDS 1 nest representing 1 provincial region.

Only 1 documented nest of this warbler has been reported in Ontario. The nest was found on 14 June 1938 at Favourable Lake Mine, Kenora District, in an area of second-growth willow, poplar, and birch species.

The nest was on the ground by fallen, moss-covered logs, a short distance from a road. The nest exterior was formed of deciduous leaves, grasses, plant stalks, and bark strips. It was lined with fine grasses and a few rootlets. The nest had an outside diameter of 8.5 cm (3.3 inches), inside diameter of 4.0 cm (1.6 inches), outside depth of 5.0 cm (2 inches), and inside depth of 3.5 cm (1.4 inches).

The nest contained 4 eggs which were slightly incubated. The nest and eggs were collected (ROM 3372).

A second nest with eggs was apparently found at Moosonee about 1950 by Dr H. H. Axtell of the Buffalo Museum of Science, but no documentary information is available.

Breeding Distribution

The Orange-crowned Warbler breeds in the more remote areas of northern Ontario, and a nest was not found until 1938 (Baillie, 1960). Although breeding records are few, summer sightings suggest that it breeds across the province south to northern Lake Nipigon and Moosonee.



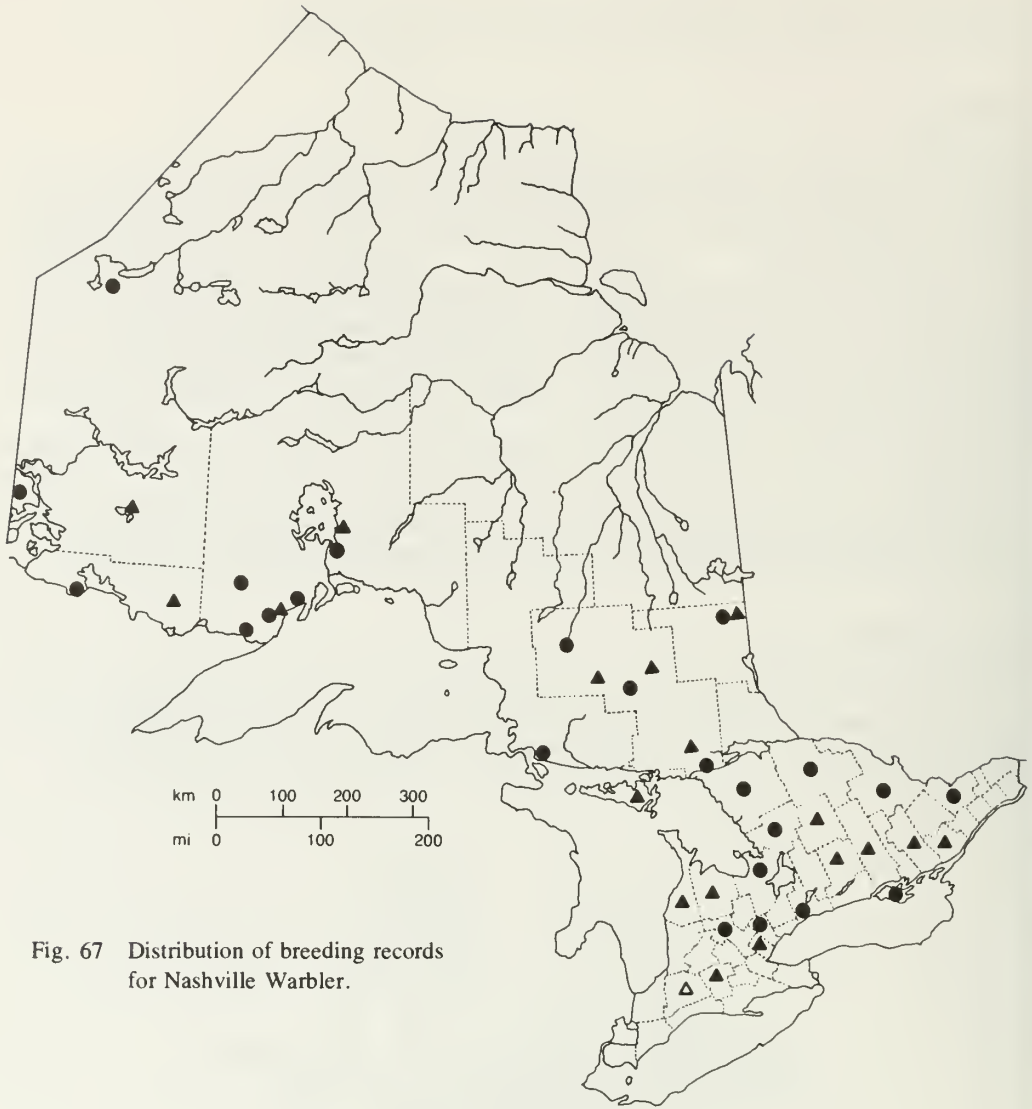


Fig. 67 Distribution of breeding records for Nashville Warbler.

Nashville Warbler, *Vermivora ruficapilla* (Wilson)

Nidiology

RECORDS 92 nests representing 26 provincial regions.

Breeds in or at the edges of mixed (24 nests), coniferous (18 nests), and deciduous (5 nests) woods; in coniferous and sphagnum bogs (15 nests); and in open, grassy and/or rocky areas with scattered trees (8 nests). The wooded areas were more often open than dense, and most nest sites were in clearings or at the edges of tree stands. Wet and dry nest locations were selected almost equally and without apparent preference. A dense ground cover was characteristic in the breeding habitat, and the types of cover most commonly noted, in order of preference, included ferns (usually bracken), grasses and sedges, mosses and clubmosses, blueberry and raspberry, Labrador tea and sheep-laurel, and various long-stemmed vascular plants. Thirteen sites were reported on slopes or hillsides.

Nests were almost always on the ground; 1 nest was elevated in the upturned roots of a fallen hemlock at a height of 0.9 m (3 ft), 1 was in a sedge clump at a height of 0.5 m (1.5 ft), and a third was in a grass clump at a height of 0.3 m (1 ft). They were variously positioned in hollows in moss hummocks or ground moss (37 nests); in clubmoss (6 nests); in grasses (5 nests); in ferns and blueberries (5 nests); in dead leaves (2 nests); and in a small depression in rock (1 nest). A number of nests (12) were reported at the bases of small trees, stumps, and bushes, or were under or beside logs. Many were well concealed by overhanging bracken fern, tree branches, grasses and weeds, bushes, and dead leaves.

Nests were described as small, neat cups composed mainly of grasses, with added mosses, plant fibres, pine needles, leaves, and plant stalks; they were lined with hair (deer, bear, and horse), fine grasses, rootlets, porcupine quills, bark, pine needles, and mosses. Six nests had outside diameters that ranged from 6 to 8 cm (2.4 to 3.1 inches), inside diameters from 3.5 to 5 cm (1.4 to 2 inches), outside depths from 2.5 to 4.5 cm (1 to 1.8 inches), and inside depths from 2 to 3.5 cm (0.8 to 1.4 inches).

EGGS 81 nests with 1 to 7 eggs; 1E (1N), 2E (3N), 3E (7N), 4E (26N), 5E (42N), 6E (1N), 7E (1N).

Average clutch range 4 to 5 eggs (68 nests).

Cowbird parasitism 86 nests with 9 parasitized (10.5%).

INCUBATION PERIOD 7 nests: 4 nests of at least 10 days, 1 nest of 11 days, 2 nests of at least 11 days.

EGG DATES 71 nests, 24 May to 21 July (93 dates); 35 nests, 4 June to 13 June.

Breeding Distribution

The Nashville Warbler probably seldom nests as far south as the Deciduous Forest region, but is found throughout the rest of the province as far north as Favourable Lake and Moosonee.

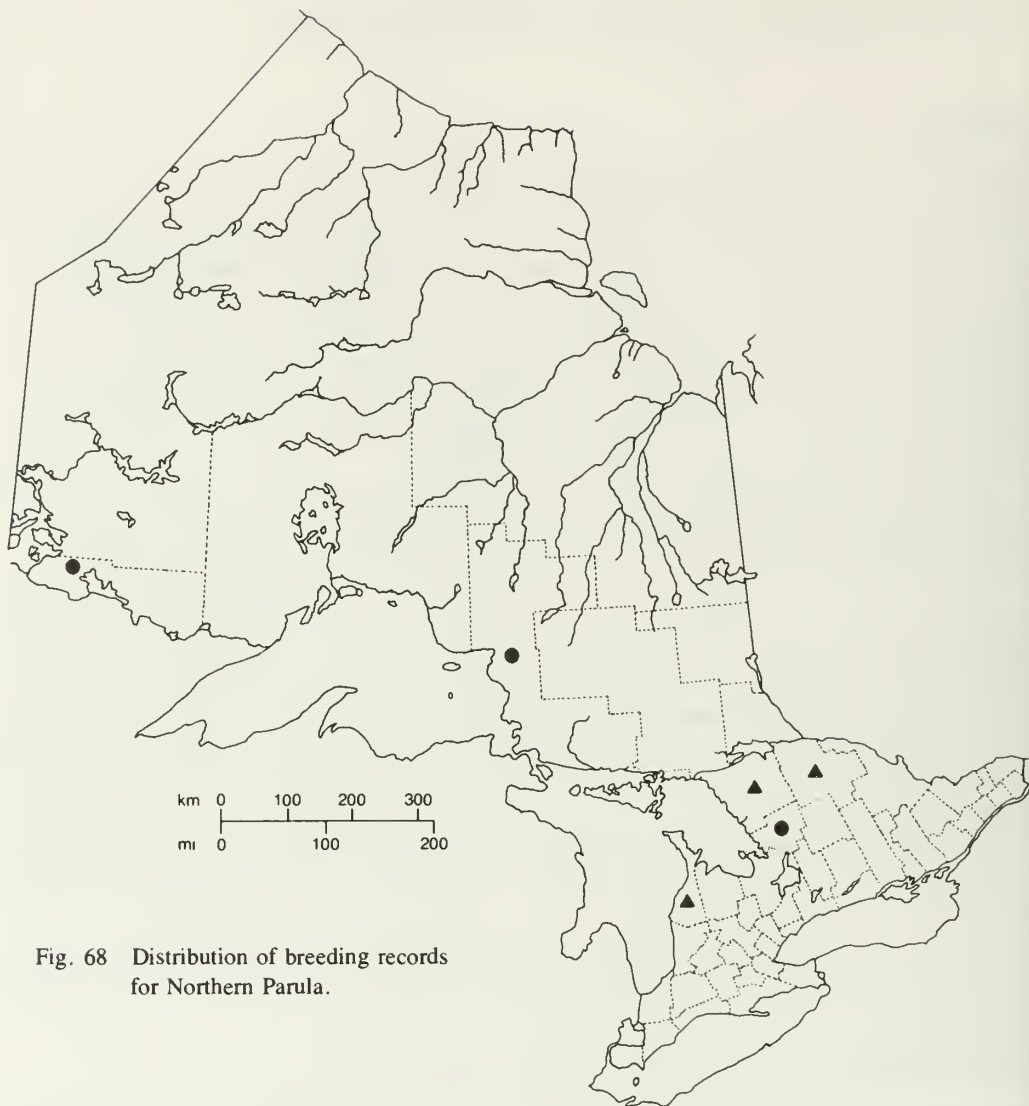


Fig. 68 Distribution of breeding records for Northern Parula.

Northern Parula, *Parula americana* (Linnaeus)

Nidiology

RECORDS 4 nests representing 3 provincial regions.

Nesting of the Northern Parula in Ontario is based on the discovery of only 4 empty nests, 2 in Muskoka DM in 1943 and 1944, 1 in Bruce County in 1966, and 1 in Algoma in 1984.

The nests were in mixed wooded areas (1 above the roof of a tourist lodge), and were in a yellow birch, balsam fir, white spruce, and white birch. Two of the nests were under construction, another had been completed and deserted, and the fourth, which was collected (ROM 6975) on 23 June 1944, was without recorded details.

One of the nests was being built in hanging usnea lichen; 1 was completely formed of usnea lichen; a third nest contained some leaves, had little or no usnea lichen, and was built among branchlets of a white spruce towards the end of a drooping lower branch at a height of 4.9 m (16 ft). A fourth nest was being built of usnea lichen in a curl of bark attached to the trunk of a white birch at a height of 8 m (26 ft). A collected nest had an outside diameter of 9.5 cm (3.8 inches), inside diameter of 3.8 cm (1.5 inches), outside depth of 7 cm (2.8 inches), and inside depth of 2.5 cm (1 inch).

Breeding Distribution

The Northern Parula breeds across northern Ontario as far north as Lake Nipigon and Lake Abitibi. In southern Ontario it breeds south to Muskoka DM, rarely to Bruce and Simcoe counties and possibly to Ottawa-Carleton RM.



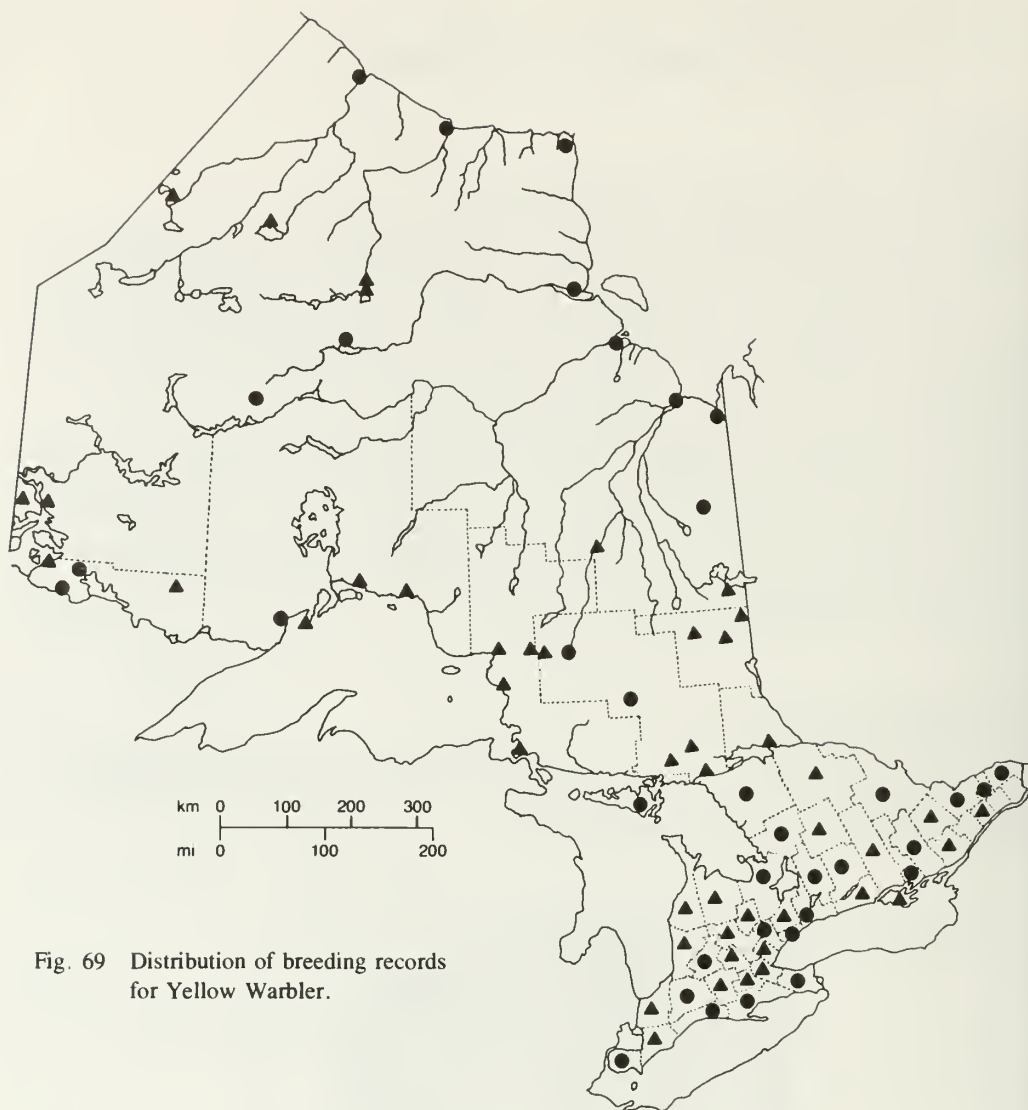


Fig. 69 Distribution of breeding records for Yellow Warbler.

Yellow Warbler, *Dendroica petechia* (Linnaeus)

Nidiology

RECORDS 1801 nests representing 48 provincial regions.

Breeds in overgrown fields and pastures (Fig. 179) (including Christmas tree farms—Fig. 181) (138 nests); at lake/slough/river shorelines and in flood plains (55 nests); in woods and at woodland edges (42 nests); in gardens and cottage areas (31 nests); at marsh edges (28 nests); in hedges, fencerows, and old orchards (16 nests); in bogs and fens (6 nests); on railroad and road right-of-ways (3 nests); and in boreal forest burns (1 nest). Mixed woodland habitats were reported somewhat more often than deciduous, and coniferous habitats were only occasionally recorded. Treed habitats were usually open and consisted primarily of low trees and shrubs. Both wet and dry habitats were recorded, and although

nests were often near water, its proximity seemed to indicate mainly the presence of such preferred nesting shrubs and trees as willow, alder, and dogwood. In tundra regions nests were located in willow and alder borders of sloughs and rivers (Fig. 147). In preferred habitat, especially if limited, nests were relatively close to each other, and a colonial situation was approximated.

Nests were elevated almost invariably in shrubs, trees, and vines. Deciduous species (29 spp., 308 nests) were greatly preferred to coniferous (7 spp., 41 nests), and those most frequently selected were hawthorn spp. (78 nests), willow spp. (52 nests), raspberry and other *Rubus* spp. (22 nests), white cedar (21 nests), dogwood spp. (19 nests), honeysuckle spp. (16 nests), and spiraea spp. (15 nests). One nest was on a fallen limb and 3 nests were attached to stalks of reed grass in a dense stand of this plant. Most nests were positioned centrally in the shrub or tree and were in upright crotches. Some were on horizontal branches and a few were described as being suspended from limbs. One nest was 1.5 m (5 ft) distant from a nest of American Robin and another was 3 m (10 ft) from a nest of Swamp Sparrow. Four nests were over water. Heights of 367 nests ranged from 0.3 to 6 m (1 to 20 ft), with 183 averaging 0.9 to 1.5 m (3 to 5 ft).

Nests (Fig. 180A) were described as compactly woven cups. Deep nests consisting of more than 1 tier were reported due to the propensity of this species for building over and hiding the eggs of Brown-headed Cowbird. Twenty-nine nests were reported with 2 tiers, 7 with 3 tiers, 2 with 4 tiers, and 1 with 5 tiers.

Nest exteriors were characteristically composed of grasses, plant down, and plant fibres, and usually presented a "felted" appearance due to the quantity of down used. Other exterior materials were bark shreds, string, paper, spider webs, mosses, pine needles, feathers, rootlets, lichens, cotton batting, and fine twigs. The plant down usually extended through the nest wall to form the nest lining. Other lining materials were hair, feathers, grasses, and rootlets. Fifteen single-tiered nests had outside diameters ranging from 4.5 to 9 cm (1.8 to 3.5 inches), inside diameters from 3.5 to 6.4 cm (1.4 to 2.5 inches), outside depths from 4.5 to 11 cm (1.8 to 4.3 inches), and inside depths from 3 to 5 cm (1.2 to 2 inches).

EGGS 773 nests with 1 to 8 eggs; 1E (57N), 2E (58N), 3E (94N), 4E (326N), 5E (234N), 6E (3N), 8E (1N).

Average clutch range 4 to 5 eggs (560 nests).

Cowbird parasitism 1350 nests with 399 parasitized (29.6%).

INCUBATION PERIOD 13 nests, 9 to 13 days: 1 of 9 days, 2 of 10 days, 3 of 11 days, 1 between 10 and 12 days, 1 of no more than 12 days, 2 of 12 days, 3 of 13 days.

The range of times suggests that incubation may commence before the laying of the last egg. The 9-day period was of a July nest and air temperature may have shortened the period.

EGG DATES 967 nests, 15 May to 17 July (1053 dates); 483 nests, 2 June to 15 June. Renestings were reported.

Breeding Distribution

The Yellow Warbler breeds throughout the province.

[*Note:* A male Prothonotary Warbler mated to a female Yellow Warbler was found at a nest in Welland County in 1956, and the resulting hybrid young were reared in captivity (Gunn, 1956).]

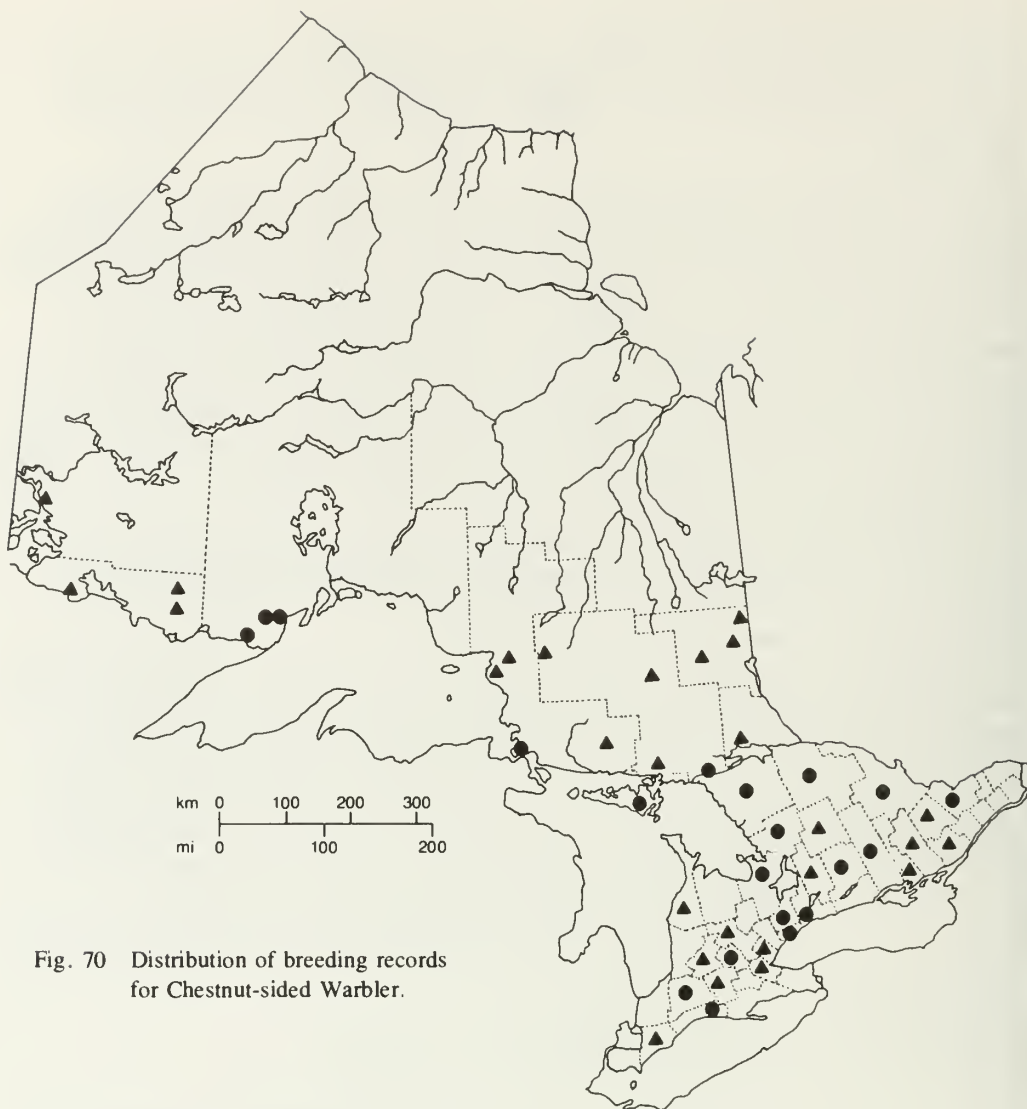


Fig. 70 Distribution of breeding records for Chestnut-sided Warbler.

Chestnut-sided Warbler, *Dendroica pensylvanica* (Linnaeus)

Nidiology

RECORDS 236 nests representing 33 provincial regions.

Breeds most often in the understory and at the edges of deciduous or mixed woods, and occasionally of coniferous woods; in semi-open and cutover woodlands; in overgrown fields; in brushy woodland borders; in swampy areas and beaver meadows; in hydro slashings; and in sphagnum bogs. Nests were commonly reported near roads (36 nests) and water (13 nests), indicating the species' preference for open and edge areas.

Nests were elevated usually above ground, but occasionally above water (3 nests). They were situated most often in shrubs or small trees, but sometimes were in ferns and other non-woody plants. Deciduous shrubs and trees (18 spp., 181 nests) were greatly preferred to coniferous trees (5 spp., 17 nests), and the species selected most commonly were hazel spp. (62 nests), raspberry/blackberry spp. (37 nests), maple spp. (22 nests), and alder spp. (10 nests). Nests usually were positioned in crotches (51 nests), sometimes were supported at the junction of 2 adjacent plant growths (17 nests), or occasionally were saddled on 1 or 2 branches (3 nests). Nest positions varied from the outer periphery of a shrub to against the main trunk of a small tree. They were often canopied and well concealed in surrounding growth. Two occupied nests of this species were noted within 90 m (295 ft) of each other. Heights of 203 nests ranged from 0.2 to 1.8 m (0.5 to 6 ft), with 101 averaging 0.5 to 0.9 m (1.6 to 3 ft).

Nests were usually well-made (a few were loose and fragile), woven structures with relatively deep cups. Their exteriors were composed of grasses (2 had sedges), bark strips (often birch), plant fibres, rootlets, leaves, plant down, hair, spider webs, twigs, pine needles, and lichens. Linings were of fine grasses, hair, rootlets, plant down, pine needles, spider webs, and lichens. A nest containing 1 egg had been built on top of another (double nest). Nine nests had outside diameters ranging from 7 to 8 cm (2.8 to 3.1 inches), inside diameters from 4.5 to 5 cm (1.8 to 2 inches), outside depths from 5 to 8.5 cm (2 to 3.3 inches), and inside depths from 3 to 3.7 cm (1.2 to 1.5 inches).

EGGS 123 nests with 1 to 5 eggs; **1E** (8N), **2E** (4N), **3E** (33N), **4E** (76N), **5E** (2N).

Average clutch size 4 eggs (76 nests).

In 1 nest a single egg was laid, incubated, and hatched, and the young fledged. Eggs were laid daily.

Cowbird parasitism 211 nests with 45 parasitized (21.3%).

INCUBATION PERIOD 24 nests, 10 to 12 days: 7 of 10 days, 12 of 11 days, 5 of 12 days.

EGG DATES 156 nests, 25 May to 22 July (201 dates); 78 nests, 7 June to 17 June.

Breeding Distribution

The Chestnut-sided Warbler breeds throughout southern Ontario. In the north it is found in summer as far north as Lake Abitibi and Pickle Lake. In the west it probably ranges somewhat farther north on occasion, as is indicated by an unconfirmed sighting of an adult feeding young at Ney Lake many kilometres beyond any other records (Baillie and Harrington, 1937).

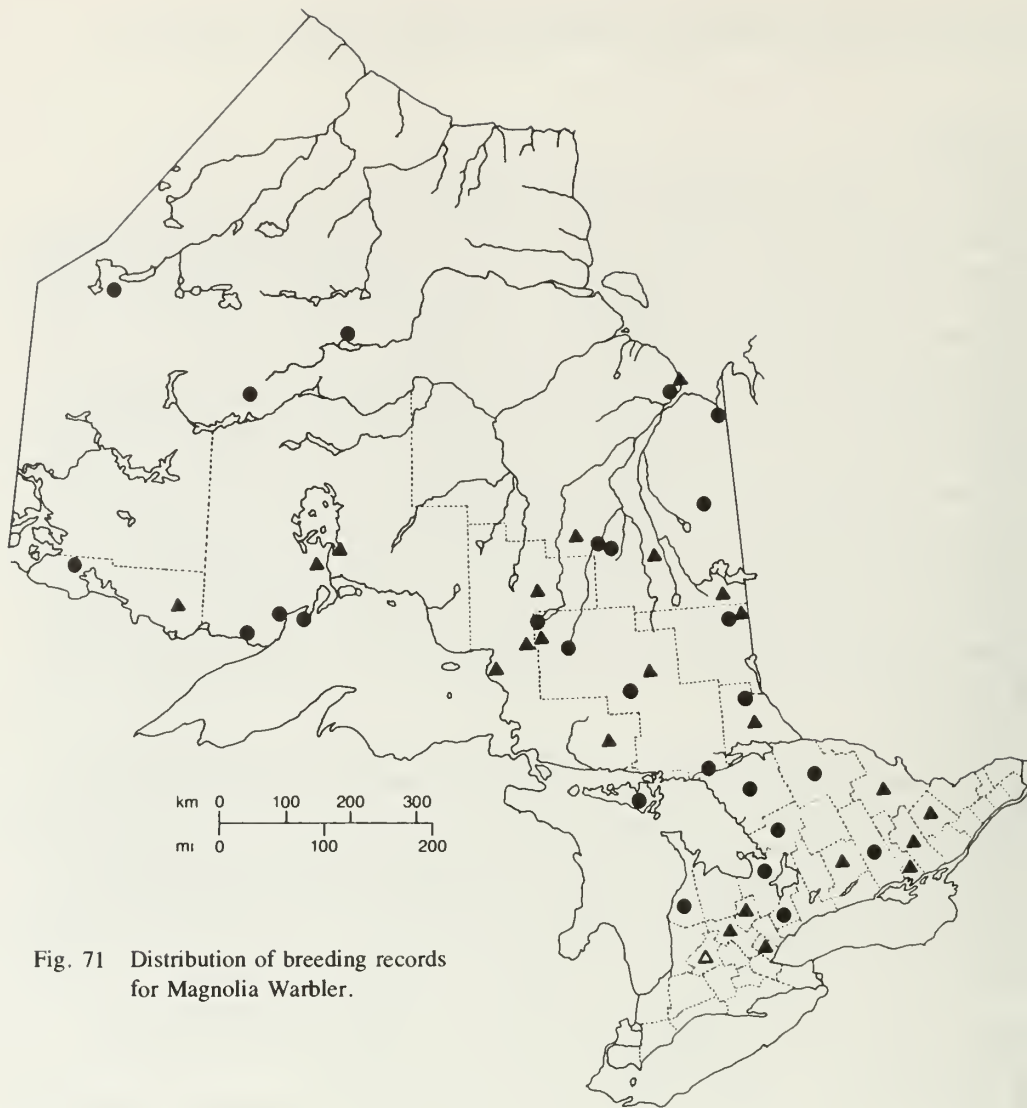


Fig. 71 Distribution of breeding records for Magnolia Warbler.

Magnolia Warbler, *Dendroica magnolia* (Wilson)

Nidiology

RECORDS 119 nests representing 21 provincial regions.

Breeds in open or dense woods—mixed (36 nests), coniferous (18 nests), and occasionally, deciduous (4 nests). Tree stands were both second growth and mature. Nests were situated usually at woodland edges or openings which had dense understories of small coniferous, and less often, deciduous trees and bushes.

Nests were invariably elevated in living (1 tree was dead) trees and shrubs, with coniferous types (7 spp., 91 nests) greatly favoured over deciduous (4 spp., 9 nests). Trees and shrubs with heights under 3 m (10 ft) (38 nests) were usually chosen, and less often those with heights between 3 and 6 m (10 and 20 ft) (2 nests) and large trees (4 nests). The DBH of 3 nest trees were 2.5, 5, and 7.5 cm (1, 2, and 3 inches). Trees selected most commonly were spruce spp. (59 nests), balsam fir (19 nests), hemlock (5 nests), white cedar (4 nests), maple spp. (3 nests), and alder spp. (3 nests).

Nests were often well hidden. They either were positioned away from the main trunk (18 nests) on a lateral limb, usually cradled in several branchlets or in a crotch, or were against the trunk (10 nests) supported by a lateral limb or several branchlets. Distances from the trunk of 10 nests ranged from 0.6 to 2.4 m (2 to 8 ft). Four nests were located on lateral branches between the trunks of 2 adjacent small trees. Heights of 99 nests ranged from 0.25 to 6 m (0.8 to 20 ft), with 49 averaging 0.8 to 1.5 m (2.5 to 4.8 ft).

Nests were described as fragile cups with loose, rough exteriors, formed of grasses, plant stalks and fibres, pine needles, leaves and leaf petioles, spider webs and insect silk, animal hair, twigs, bark, mosses, and plant down. Linings were characteristically of fine, black rootlets, with the occasional addition of fine grasses. Sixteen nests had outside diameters that ranged from 7.5 to 12.7 cm (3 to 5 inches), inside diameters from 4 to 6 cm (1.6 to 2.4 inches), outside depths from 4 to 9 cm (1.6 to 3.5 inches), and inside depths from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 97 nests with 1 to 5 eggs; 1E (6N), 2E (4N), 3E (20N), 4E (59N), 5E (8N).

Average clutch range 4 eggs (59 nests).

Cowbird parasitism 111 nests with 11 parasitized (9.9%).

INCUBATION PERIOD 9 nests, 11 to 13 days: 1 of 11 days, 1 of at least 11 days, 1 of ca 11 days, 3 of 12 days, 1 of not more than of 12 days, 1 of 13 days, 1 of not more than 13 days.

EGG DATES 87 nests, 29 May to 17 July (110 dates); 43 nests, 12 June to 23 June.

Breeding Distribution

The Magnolia Warbler (Fig. 166B) breeds throughout most of Ontario. It ranges at least as far north as Big Trout Lake and Fort Albany, but summer records suggest breeding north to Sutton Lake (James et al., 1983). In southern Ontario it is found almost exclusively on the Canadian Shield, but occasionally it breeds as far south as Haldimand-Norfolk RM.

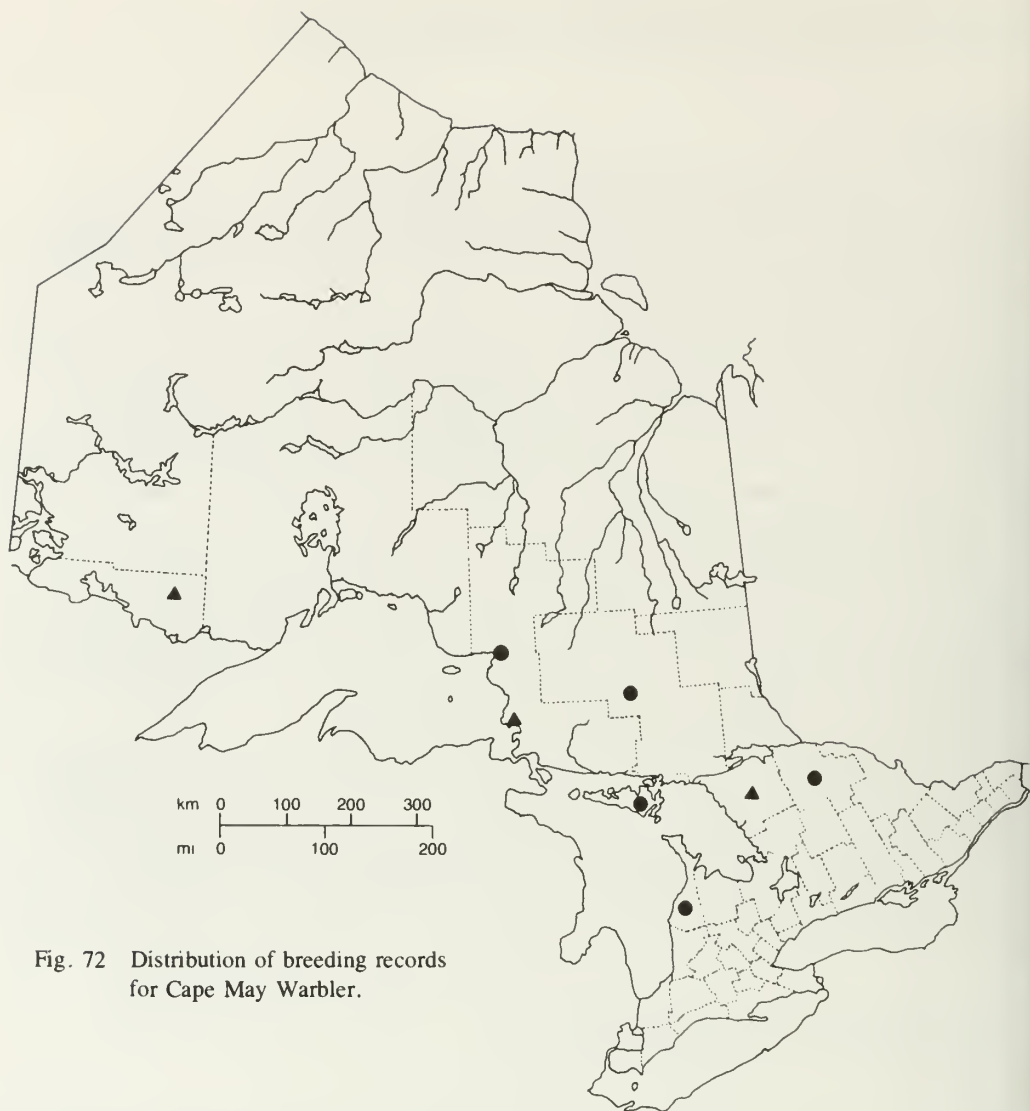


Fig. 72 Distribution of breeding records for Cape May Warbler.

Cape May Warbler, *Dendroica tigrina* (Gmelin)

Nidiology

RECORDS 5 nests representing 3 provincial regions.

Nests high and inconspicuously in conifers; only 5 nests have been found in Ontario.

The first provincial nest (ROM 7032) was found at Dorcas Bay, Bruce County, on 12 June 1934. It was near the top of a spruce tree, against the trunk, and contained 6 eggs. The nest height was 7.6 m (25 ft). The nest exterior was formed of spruce twigs and sphagnum moss; the lining was of grasses, hair, rootlets, and feathers.

A second nest (ROM 12345) was found in Campbell Township, on Manitoulin Island, on 26 June 1977. The nest was in a coniferous woods, in a white spruce, and was situated between 2 leaders, 0.3 m (1 ft) below the top of the tree, at a height of 12 m (40 ft). It contained 3 large young which left the nest when it was examined. The nest exterior was formed of grasses, mosses, twigs, and bark strips. It was lined with grasses, fine rootlets, hair, and a few feathers.

The third and fourth nests were found near Wawa, Algoma District, on 2 and 3 July 1981 respectively, and were close to each other. Both were in black spruces at approximate heights of 12 and 15 m (40 and 50 ft). One of the nests contained 4 young, and the other an undetermined number of young.

The fifth nest (ROM 12872) was also found near Wawa, Algoma District, on 8 June 1984, and was under construction by a female. It was in a second-growth mixed forest of birch and spruce, and was situated 0.75 m (2.5 ft) below the top of a black spruce at a height of 9 m (30 ft). The nest was among a group of small branchlets ca 5 cm (2 inches) out from the trunk. It was a rough cup of bark strips, grasses, fine plant stalks, insect silk, and black rootlets, lined with black rootlets.

Three nests had outside diameters of 11, 11, and 9.5 cm (4.3 and 3.7 inches), inside diameters of 5, 5, and 5 cm (2 inches), outside depths of 5.5, 6.5, and 7 cm (2.2, 2.6, and 2.8 inches), and inside depths of 3.5, 5, and 2.5 cm (1.4, 2, and 1 inches).

Breeding Distribution

The breeding range of the Cape May Warbler may extend at least as far north as Little Sachigo Lake and Moosonee where birds have been occasionally sighted, but the northern limits are poorly defined. It extends south in summer to the tip of the Bruce Peninsula and Algonquin Provincial Park.

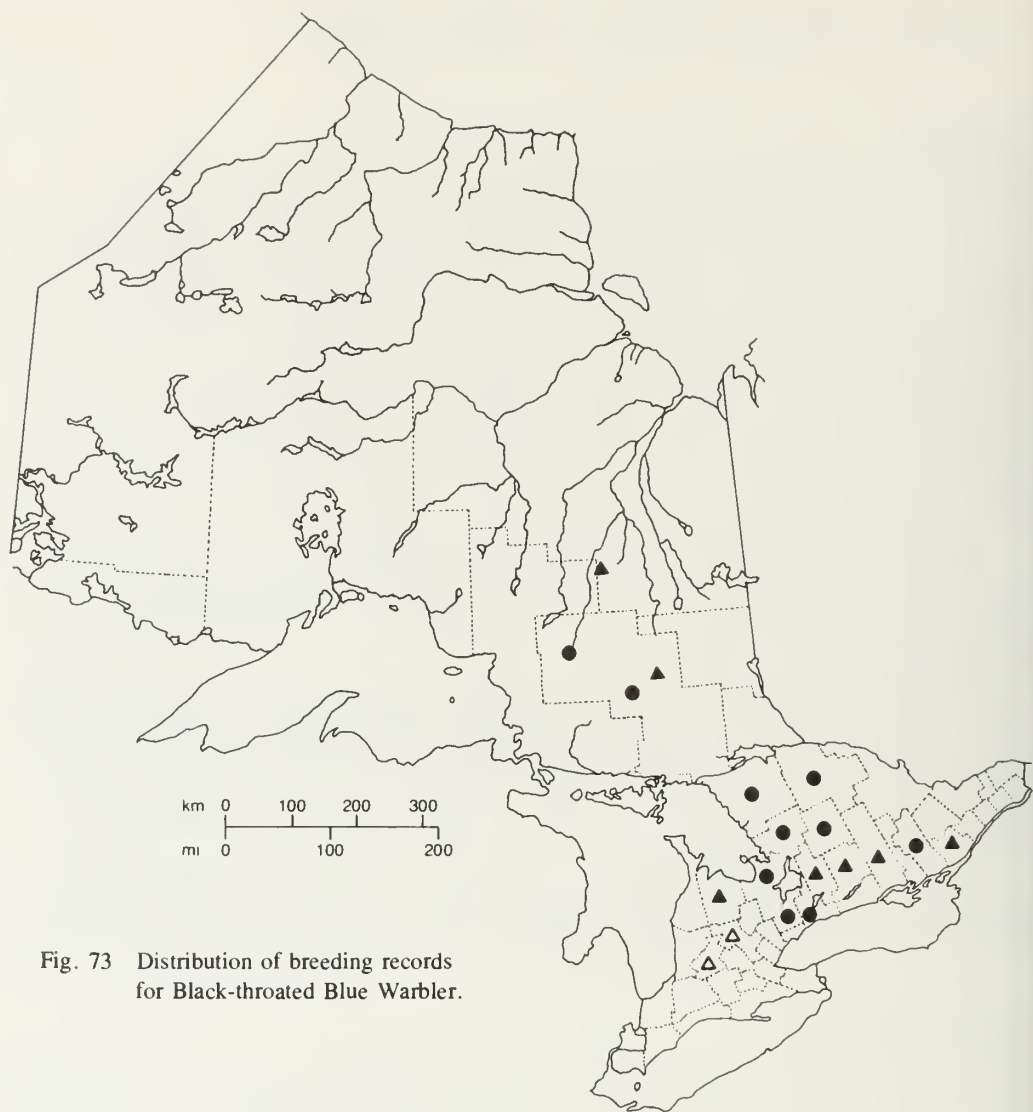


Fig. 73 Distribution of breeding records for Black-throated Blue Warbler.

Black-throated Blue Warbler, *Dendroica caerulescens* (Gmelin)

Nidiology

RECORDS 31 nests representing 12 provincial regions.

Breeds in mixed (12 nests) and deciduous (6 nests) woods, with a characteristically heavy understory. A primarily deciduous understory was noted more often than coniferous. Where specified, nests were most often near open areas (road edges, shorelines, and clearings).

Nests were in small trees and saplings, with conifers (5 spp., 16 nests) slightly preferred over deciduous species (3 spp., 12 nests); and those most frequently selected were balsam fir (9 nests), maple spp. (5 nests), hazel spp. (4 nests), spruce spp. (3 nests), and American yew (3 nests). Nests were slung between 2 or more upright trunks or branches, or were in crotches. Heights of 22 nests ranged from 0.2 to 1.7 m (0.5 to 5.5 ft), with 11 averaging 0.3 to 0.4 m (1 to 1.3 ft).

Nests (Fig. 168B) were described as relatively large and bulky, with deep cups and slightly incurved rims. A straggling exterior and an oval shape were noted for 1 nest, and another was described as wedge-shaped. Nest exteriors were formed of bark strips (usually birch), grass and weed stems, spider webs and insect silk, deciduous leaves, small twigs, horse hair, and plant material and down. Linings were characteristically of black rootlets, with bark strips, pine needles, mosses, and animal hair also noted. Ten nests had outside diameters that ranged from 8 to 9.6 cm (3.1 to 3.8 inches), inside diameters from 4.5 to 5 cm (1.8 to 2 inches), outside depths from 5 to 17.8 cm (2 to 7 inches), and inside depths from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 22 nests with 2 to 4 eggs; **2E** (2N), **3E** (3N), **4E** (17N).

Average clutch range 4 eggs (17 nests).

Cowbird parasitism 23 nests with 3 parasitized (13%).

INCUBATION PERIOD 2 nests, 12 days.

EGG DATES 18 nests, 28 May to 24 July (25 dates); 9 nests, 16 June to 24 June.

Breeding Distribution

The Black-throated Blue Warbler probably bred over a wider area in southern Ontario a century or more ago, but is now scarce or absent outside and along the southern edge of the Canadian Shield. In northern Ontario it probably does not range farther north than the latitude of northern Lake Nipigon, but does occur west to the Manitoba border, if only occasionally.

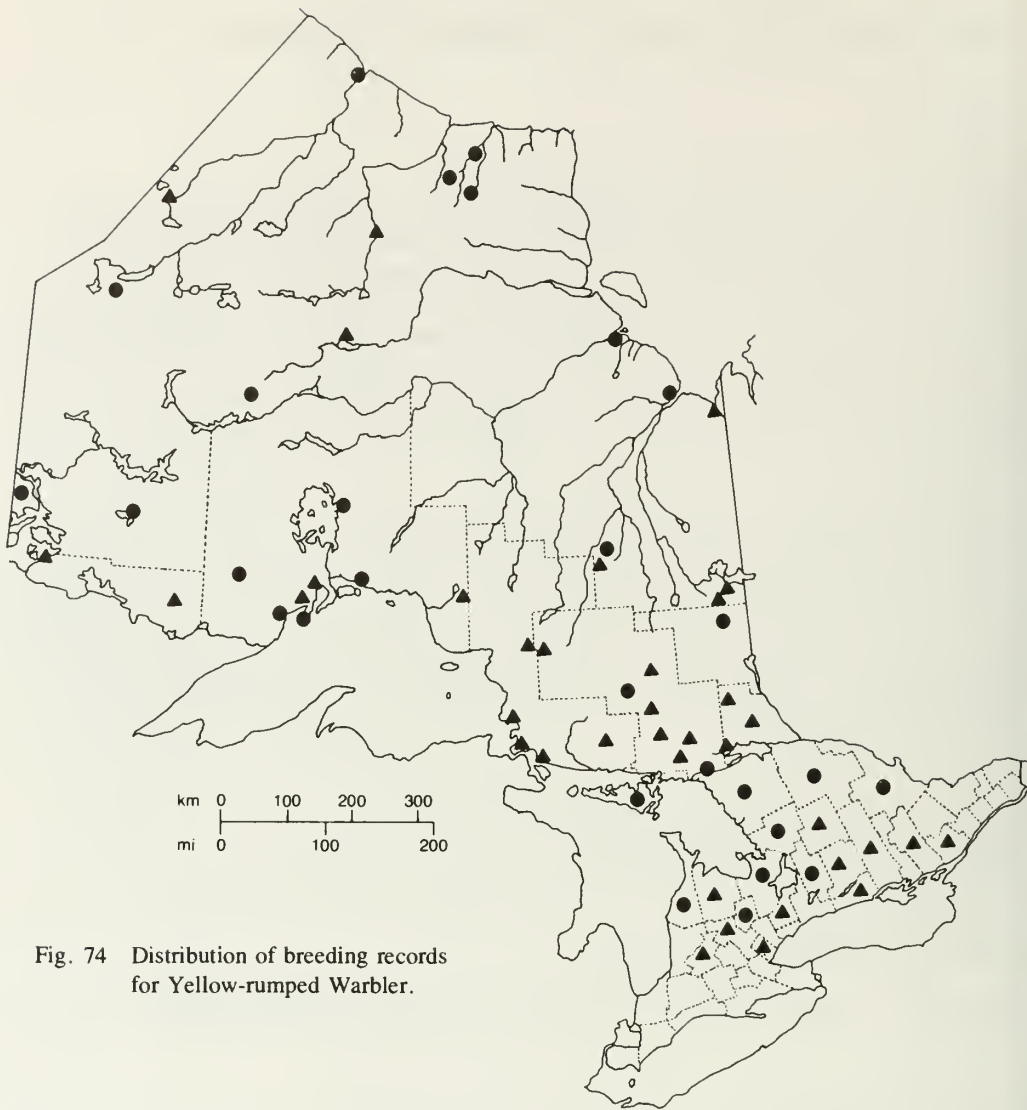


Fig. 74 Distribution of breeding records for Yellow-rumped Warbler.

Yellow-rumped Warbler, *Dendroica coronata* (Linnaeus)

Nidiology

RECORDS 177 nests representing 26 provincial regions.

Breeds usually in mature and second-growth forests. Coniferous (41 nests) and mixed woodlands (38 nests) were selected much more frequently than were deciduous woodlands (4 nests). Some breeding sites were also reported in cottage and residential areas on treed lawns and gardens (7 nests), in spruce/tamarack bogs and fens (6 nests), at beaver ponds (3 nests), in hawthorn fields (2 nests), and in a fencerow (1 nest). Most nests were in open woods or at woodland edges, and often were near roads or water. Only 1 nest was reported in

a central location in a woods. Nest sites were reported more frequently in dry areas than in wet areas.

Nests were elevated usually in living trees and shrubs (4 nests were in dead trees), although 1 nest was on the top of a rail of a vine-clad trellis, and another was in the hollow top of a dead stub. Coniferous trees (6 spp., 139 nests) were selected far more frequently than were deciduous trees and shrubs (4 spp., 10 nests). The tree species most frequently selected were pine spp. (41 were white pine) (58 nests), spruce spp. (40 nests), white cedar (28 nests), balsam fir (10 nests), and birch spp. (5 nests). Nests were positioned on horizontal branches, supported and often concealed by adjacent branchlets (41 nests); in crotches (13 nests); or among a group of nearly vertical branches (1 nest). They were usually, but not always, well hidden. Nests were somewhat more often at or near the main trunk (42 nests) than away from it (32 nests). Distances from the trunk of 16 nests ranged from 0.5 to 4.3 m (1.5 to 14 ft), with 8 averaging 1.4 to 2.4 m (4.5 to 8 ft). Nests were located at variable heights in both small and large trees. The DBH of 4 trees were 10, 10, 12.7, and 12.7 cm (4 and 5 inches). Two active nests of this species were situated within 61 m (200 ft) of each other, and another nest was 7.6 m (25 ft) from a nest of Chipping Sparrow. Heights of 149 nests ranged from 0.6 to 20 m (2 to 65 ft), with 75 averaging 2 to 6 m (6.5 to 20 ft).

Nests were relatively large structures with deep cups that were variously described as well made to frail. Their exteriors were characteristically formed of twigs, giving them a somewhat untidy appearance; other exterior materials were grasses, rootlets, bark strips, plant fibres, conifer needles, feathers, mosses, lichens, hair, insect silk, string, plant down, leaves, and fine wire. Linings were characteristically of feathers (Ruffed Grouse, Spruce Grouse, Common Loon), often forming a canopy over the eggs; other lining materials were grasses, hair, rootlets, pine needles, plant down, and tinsel. Outside diameters of 8 nests ranged from 7.5 to 15 cm (3 to 6 inches); inside diameters of 7 nests ranged from 4.4 to 6 cm (1.7 to 2.4 inches); outside depths of 8 nests ranged from 7 to 11 cm (2.8 to 4.3 inches); inside depths of 7 nests ranged from 3.8 to 6 cm (1.5 to 2.4 inches).

EGGS 53 nests with 1 to 6 eggs; 1E (5N), 2E (4N), 3E (10N), 4E (24N), 5E (8N), 6E (2N).

Average clutch range 3 to 4 eggs (34 nests).

Cowbird parasitism 122 nests with 38 parasitized (31.1%).

INCUBATION PERIOD 2 nests: 1 of 11 days, 1 of at least 11 days.

EGG DATES 89 nests, 24 May to 29 July (97 dates); 45 nests, 10 June to 26 June.

Breeding Distribution

The Yellow-rumped Warbler breeds throughout northern and much of southern Ontario, but recent records are very scarce south of the Canadian Shield.

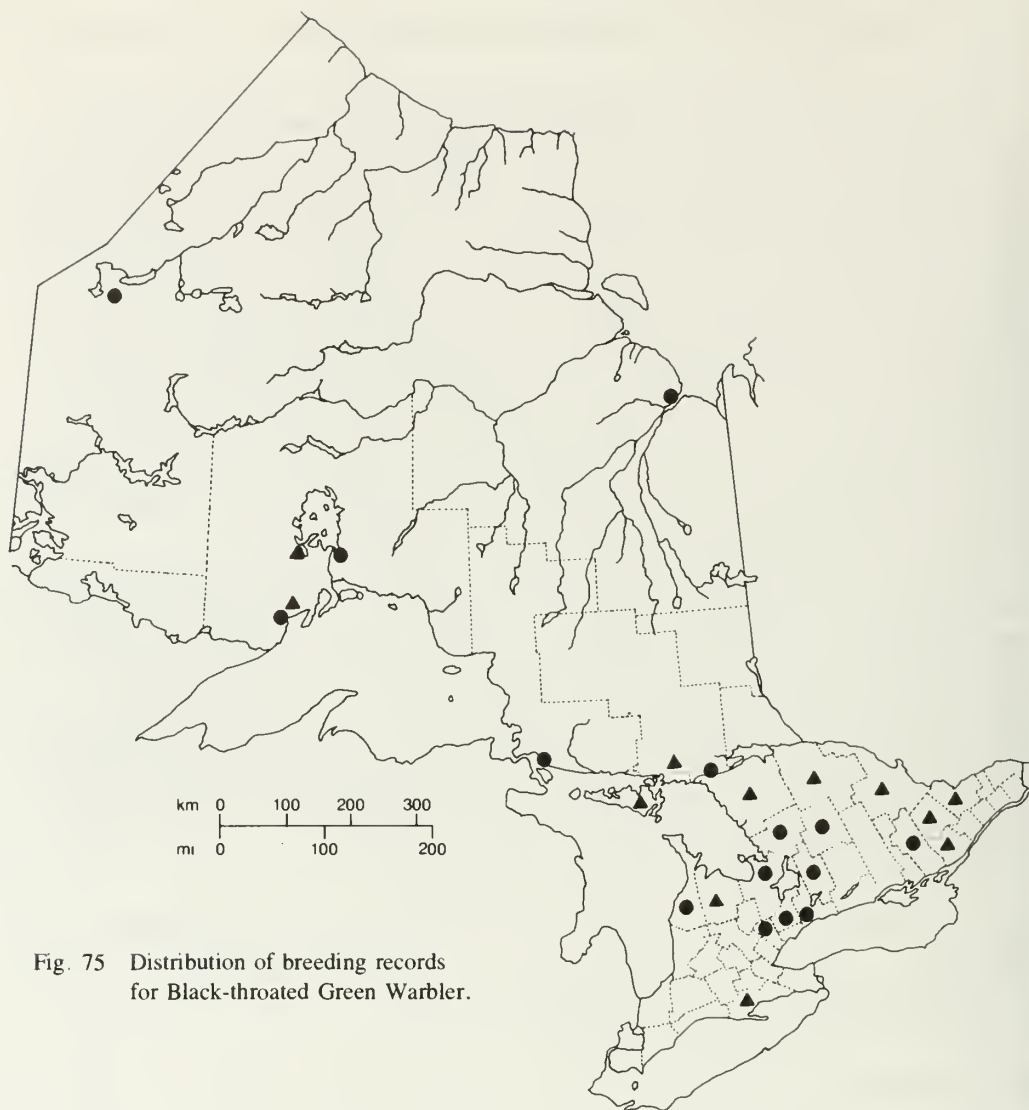


Fig. 75 Distribution of breeding records for Black-throated Green Warbler.

Black-throated Green Warbler, *Dendroica virens* (Gmelin)

Nidiology

RECORDS 47 nests representing 17 provincial regions.

Breeds almost invariably in treed areas; most often in coniferous woods (15 nests), sometimes in mixed woods (9 nests), and occasionally in deciduous woods (5 nests). Some nests were reported at forest edges, near roads or water.

Nests were located in small and large trees, with coniferous species (6 spp., 34 nests) much preferred to deciduous (4 spp., 7 nests). Hemlock (11 nests), white cedar (10 nests), spruce spp. (5 nests), and pine spp. (5 nests) were used most often. Usually nests were on living (1 branch dead), horizontal branches (17 nests), and were either saddled on the branch or supported by adjacent branchlets; others were in branch crotches (4 nests) or in crotches at the trunk (3 nests). Some nests were reported to be well concealed. Most were positioned away from the main trunk (17 nests), but some were near or at the trunk (6 nests). Distances from the trunk of 12 nests ranged from 0.2 to 4.5 m (0.8 to 15 ft), with 6 averaging 0.9 to 3.7 m (3 to 12 ft). Heights of 41 nests ranged from 0.5 to 15 m (1.5 to 50 ft), with 20 averaging 2.7 to 7.5 m (9 to 25 ft).

Nests were well-made structures with relatively deep cups. One nest was described as bulky and poorly attached. Their exteriors were formed of birch bark strips (a common characteristic), twigs, grasses, rootlets, pine needles, mosses, lichens, insect cocoons, hairs, and feathers. Linings were of black rootlets (orange-coloured in 1 nest), birch bark pieces, hairs, grasses, feathers, leaves and stems, pine needles, nylon string, cobwebs, and plant fibres. Five nests had outside diameters that ranged from 8 to 8.5 cm (3.1 to 3.3 inches), inside diameters of 4.5 cm (1.8 inches), outside depths from 4 to 5.5 cm (1.6 to 2.2 inches), and inside depths from 3 to 3.5 cm (1.2 to 1.4 inches).

EGGS 30 nests with 1 to 5 eggs; 1E (1N), 2E (3N), 3E (13N), 4E (10N), 5E (3N).

Average clutch range 3 to 4 eggs (23 nests).

Cowbird parasitism 32 nests with 11 parasitized (34.4%).

INCUBATION PERIOD 2 nests: 1 of ca 11 days, 1 of 13 days.

EGG DATES 27 nests, 5 June to 9 August (33 dates); 13 nests, 13 June to 29 June.

The protracted period of egg dates suggested double broods, although none were reported.

Breeding Distribution

The Black-throated Green Warbler breeds across the province as far north as Favourable Lake and Moosonee. In southern Ontario, south of the Canadian Shield, it is to be found only where forest habitats of significant size remain.

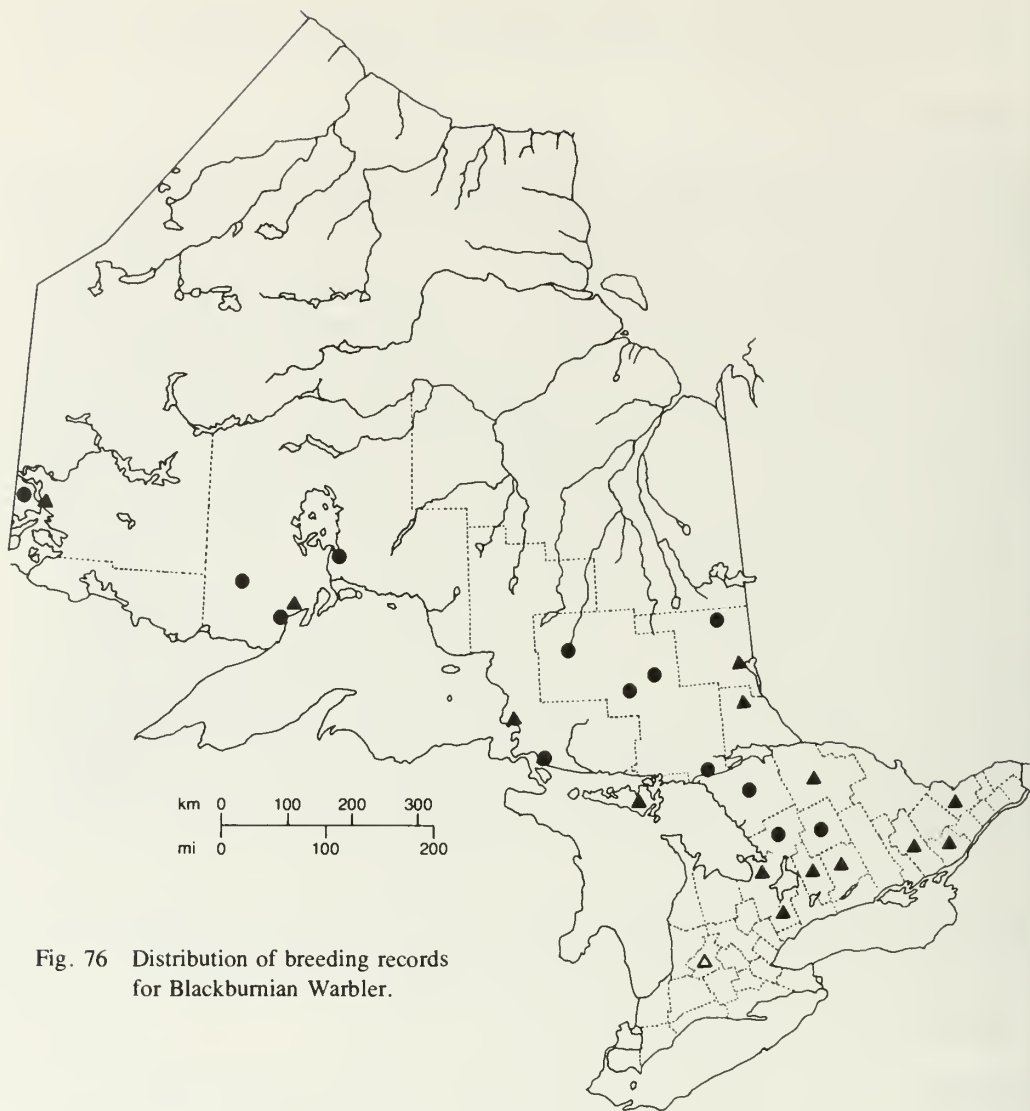


Fig. 76 Distribution of breeding records for Blackburnian Warbler.

Blackburnian Warbler, *Dendroica fusca* (Müller)

Nidiology

RECORDS 33 nests representing 11 provincial regions.

Breeds mainly in coniferous (9 nests), as well as in mixed woods (6 nests). One nest was in a spruce bog, and another was in a recent burn.

Nests were all in living coniferous trees, with pine spp. (16 nests), hemlock (6 nests), spruce spp. (5 nests), balsam fir (1 nest), and white cedar (1 nest) selected. Where specified, nests were most often in the top portion of the tree, although some were at the mid-point, and still others were in lower branches. Usually they were positioned on horizontal branches, often among smaller branchlets or at crotches (14 nests), and occasionally they were near or against the trunk (3 nests). Distances from the trunk of 11 nests ranged from 0.9 to 3.7 m (3 to 12 ft), with 5 averaging 1.8 to 2.4 m (6 to 8 ft). Heights of 20 nests ranged from 2.4 to 17.4 m (8 to 57 ft), with 10 averaging 6 to 12 m (20 to 40 ft).

Nests were cups with rough exteriors of conifer twigs, bark strips, conifer needles, spider webs, grasses, lichens, and plant down. Linings were of fine grasses, rootlets, and in 1 nest, horse hair. One nest was made almost entirely of usnea lichen with a few plant fibres, and was lined with black rootlets; another was described as frail and with a thin bottom. One nest was 35 m (115 ft) from a nest of Bay-breasted Warbler. Six nests had outside diameters that ranged from 7.5 to 9 cm (3 to 3.5 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 4.5 to 6.5 cm (1.8 to 2.6 inches), and inside depths from 3 to 3.5 cm (1.2 to 1.4 inches).

EGGS 10 nests with 1 to 5 eggs; 1E (1N), 2E (1N), 3E (1N), **4E** (5N), **5E** (2N).

Average clutch range 4 eggs (5 nests).

Cowbird parasitism 12 nests with 4 parasitized (33.3%).

INCUBATION PERIOD 1 nest, ca 12 days.

EGG DATES 12 nests, 1 June to 5 July (14 dates); 6 nests, 12 June to 30 June.

Breeding Distribution

The Blackburnian Warbler breeds across Ontario as far north as Sioux Lookout and Lake Abitibi, and probably somewhat farther. In the south it is seldom found during the breeding season south of the Canadian Shield.

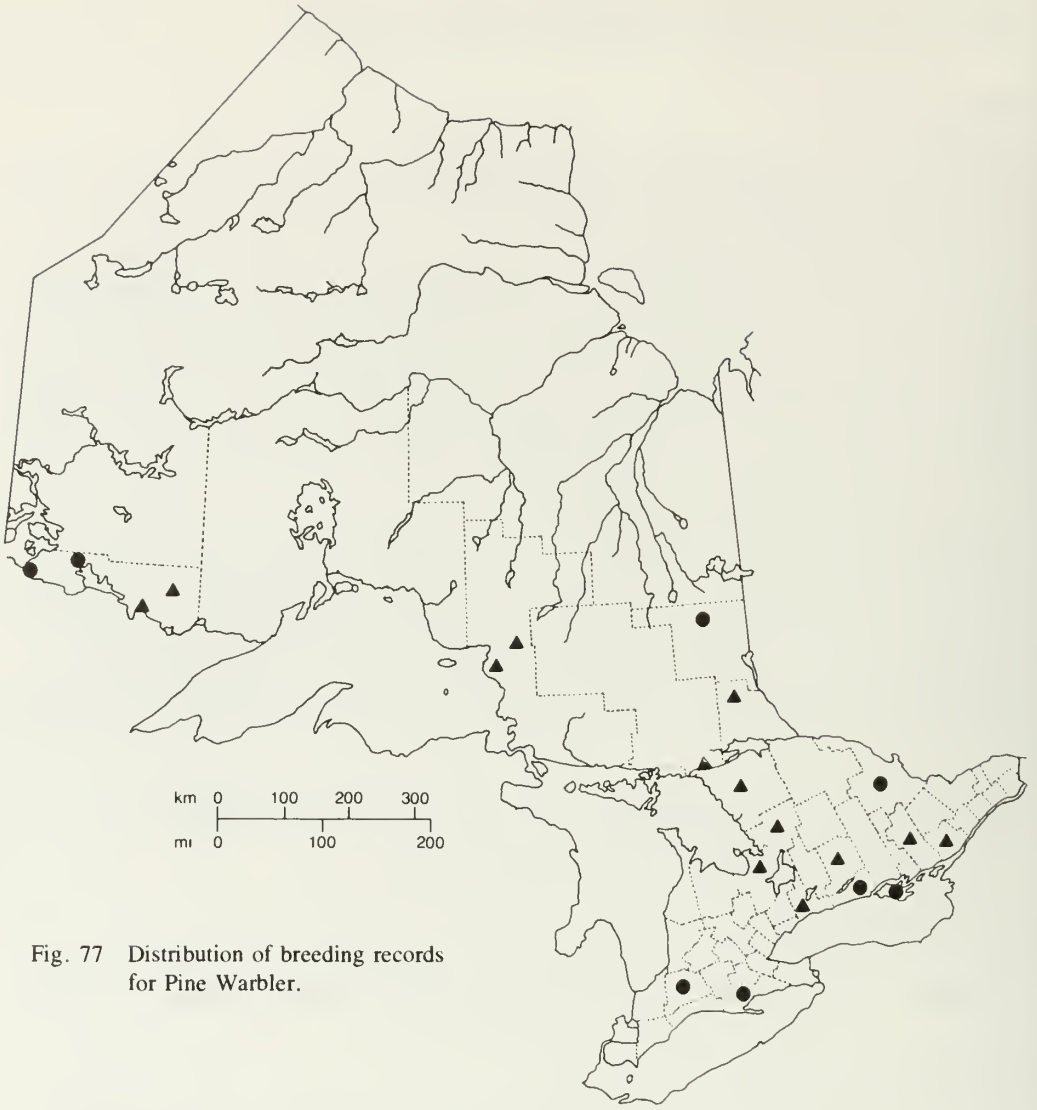


Fig. 77 Distribution of breeding records for Pine Warbler.

Pine Warbler, *Dendroica pinus* (Wilson)

Nidiology

RECORDS 15 nests representing 11 provincial regions.

Breeds usually in or at the edge of open coniferous stands (8 nests), in a mixed stand (1 nest), on an island with a few large pines (1 nest), in unspecified woodlands (3 nests), and in a lone pine tree in a village garden (1 nest).

Nests were invariably in coniferous trees and usually in pines. Nest trees selected were white pine (5 nests), red pine (4 nests), jack pine (2 nests), spruce sp. (1 nest), and an unspecified conifer (1 nest).

Nest positions varied from near the top of the tree (5 nests) to the lowermost branch (1 nest). Most were near the ends of lateral branches, with 1 nest noted 1.1 m (3.5 ft) from the trunk. Two nests were saddled on horizontal branches, and 2 others were placed in clusters of pine needles (1 at a fork). Heights of 14 nests ranged from 4.6 to 18 m (15 to 60 ft), with 8 averaging 8.5 to 15 m (28 to 50 ft).

Nest exteriors were constructed of grasses, pine needles, rootlets, feathers, mosses, string, and wool scraps; linings were of hair, feathers, and down. Two nests had outside diameters of 7.5 and 8 cm (3 and 3.1 inches), inside diameters of 4.5 and 4.5 cm (1.8 inches), outside depths of 4.5 and 4.5 cm (1.8 inches), and inside depths of 3 and 3 cm (1.2 inches).

EGGS 3 nests with 3 to 5 eggs; 3E (1N), 4E (1N), 5E (1N).

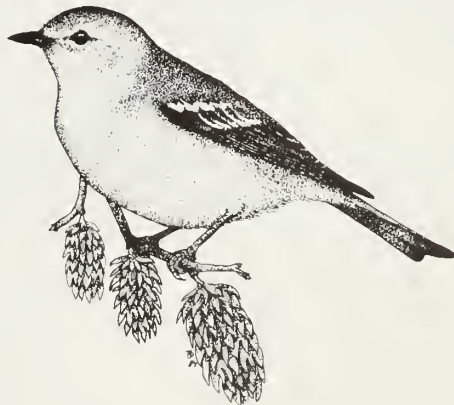
Cowbird parasitism 8 nests with 4 parasitized (50%).

INCUBATION PERIOD No information.

EGG DATES 4 nests, 7 June to 1 July (4 dates); 2 nests, 12 June to 16 June.

Breeding Distribution

The Pine Warbler breeds throughout southern Ontario, although only locally south of the Canadian Shield, and in northern Ontario as far north as Kenora, northern Lake Superior, and northern Timiskaming District.



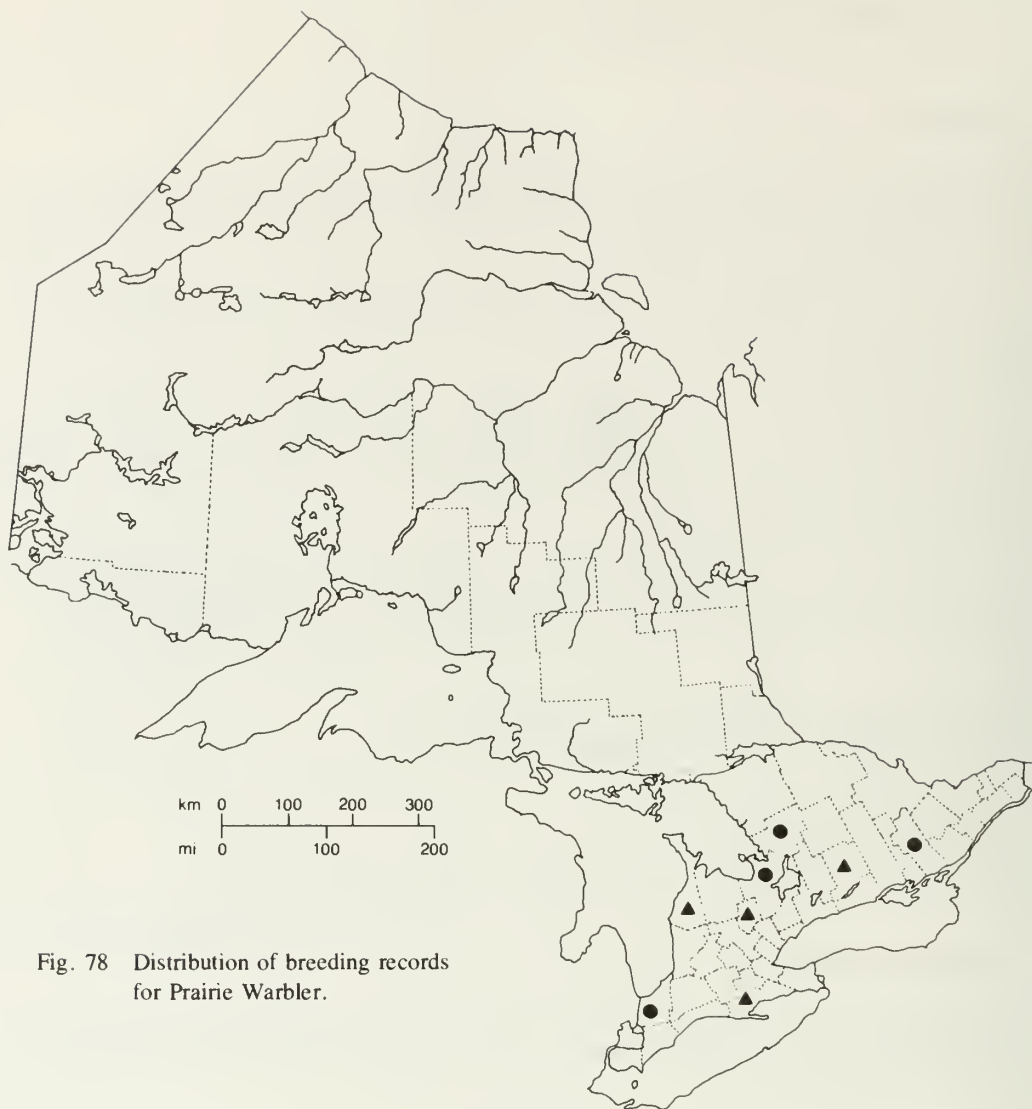


Fig. 78 Distribution of breeding records for Prairie Warbler.

Prairie Warbler, *Dendroica discolor* (Vieillot)

Nidiology

RECORDS 28 nests representing 8 provincial regions.

Breeding habitats are usually in regions of open, low growth, with juniper and scrub oak predominating (Fig. 169). These areas are either sandy (12 nests) or rocky (10 nests), and both are almost invariably dry. One nest was in a pine plantation, and another was in an overgrown meadow. Many nests were near the shorelines of lakes.

Nests were often in low shrubs of juniper spp. (18 nests), with 1 each in a dogwood sp., a white oak, a pin cherry, and a maple-leaved viburnum. They were variously positioned in crotches in the upper part of the bush (4 nests), in outer branches (2 nests), and between 2 branches (1 nest). Heights of 21 nests ranged from 0.3 to 1.5 m (1 to 5 ft), with 11 averaging 0.6 to 0.9 m (2 to 3 ft).

Nests were described as cups, whose exteriors were composed of grasses, bark strips, plant fibres, spider webs, plant down, string, paper, rootlets, hair, pine needles, and fibreglass insulation. Linings were of hair, plant down, rootlets, feathers, and fine grasses. Eight nests had outside diameters that ranged from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 5.5 to 7 cm (2.2 to 2.8 inches), and inside depths from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 22 nests with 1 to 6 eggs; 1E (2N), 2E (2N), 3E (5N), 4E (8N), 5E (4N), 6E (1N).

Average clutch range 3 to 4 eggs (13 nests).

Cowbird parasitism 24 nests with 8 parasitized (33.3%).

INCUBATION PERIOD No information.

EGG DATES 17 nests, 17 May to 8 July (19 dates); 8 nests, 8 June to 19 June.

Renesting occurred after desertion following cowbird parasitism.

Breeding Distribution

The first provincial nest of a Prairie Warbler (Fig. 170A, B) was found in 1922 in Simcoe County. The species breeds in specific habitats in a few widely scattered localities in southern Ontario, as far north as Parry Sound District and Frontenac County, and possibly also on Manitoulin Island.

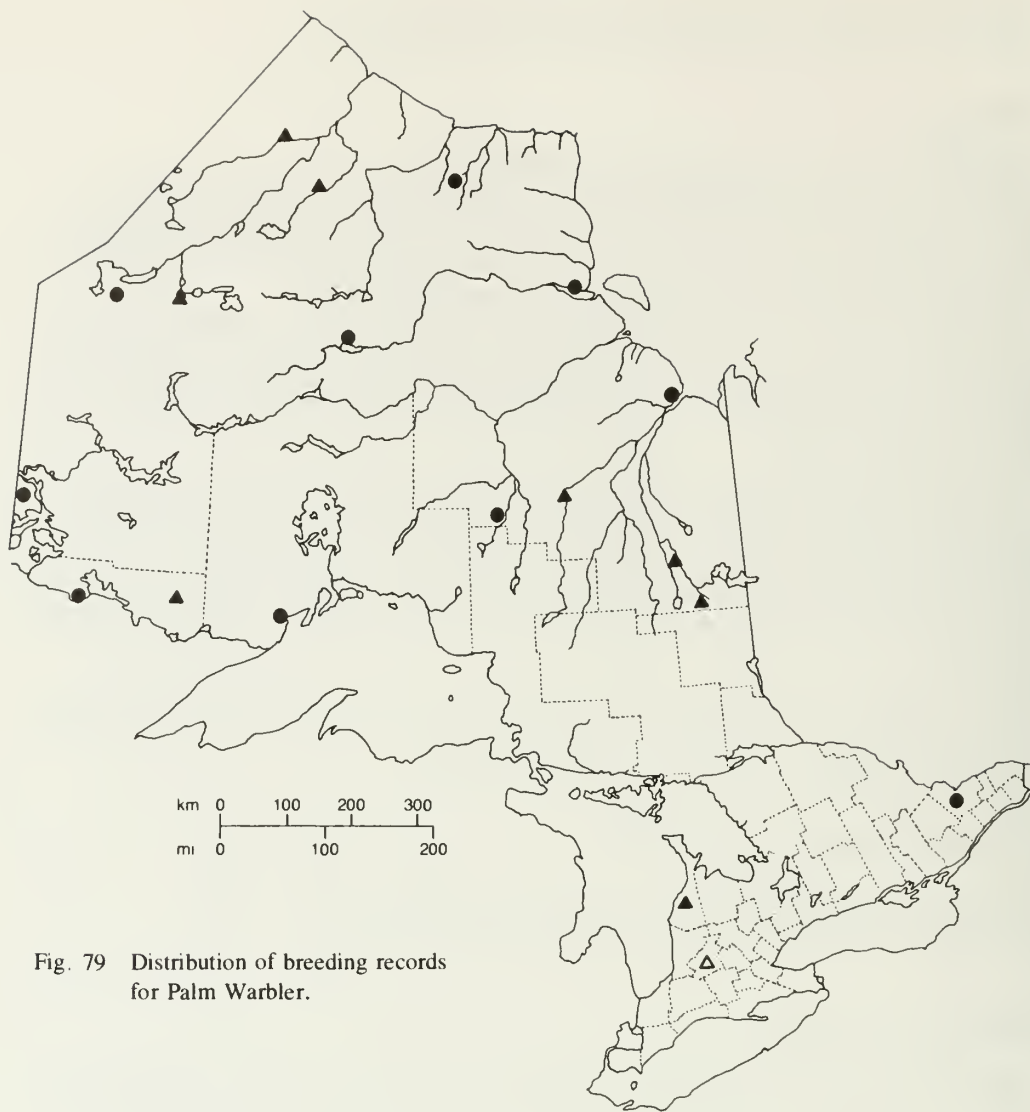


Fig. 79 Distribution of breeding records for Palm Warbler.

Palm Warbler, *Dendroica palmarum* (Gmelin)

Nidiology

RECORDS 15 nests representing 6 provincial regions.

Breeds usually in wet areas, in spruce or spruce/tamarack bogs (11 nests), spruce swamps (2 nests; Fig. 151), and a treeless muskeg area (1 nest).

Nests were almost always on the ground, most often in hummocks of sphagnum moss (7 nests), and occasionally in sedge hummocks (1 nest), in lichens (1 nest), and in the shelf of a root of a fallen tree (1 nest). Nests were frequently located near or at the bases of small trees and shrubs, and 1 was noted under a fallen branch.

Nests were described as cups, and were formed of grasses and sedges, plant stalks, mosses, twigs, bark, rootlets, and leaves. Linings were of feathers, fine grasses, rootlets, and hair. Two nests had outside diameters of 8 and 9.5 cm (3.1 and 3.7 inches), inside diameters of 6 and 5 cm (2.4 and 2 inches), outside depths of 6 and 5.5 cm (2.4 and 2.2 inches), and inside depths of 4 and 4 cm (1.6 inches).

EGGS 13 nests with 4 to 5 eggs; **4E** (7N), **5E** (6N).

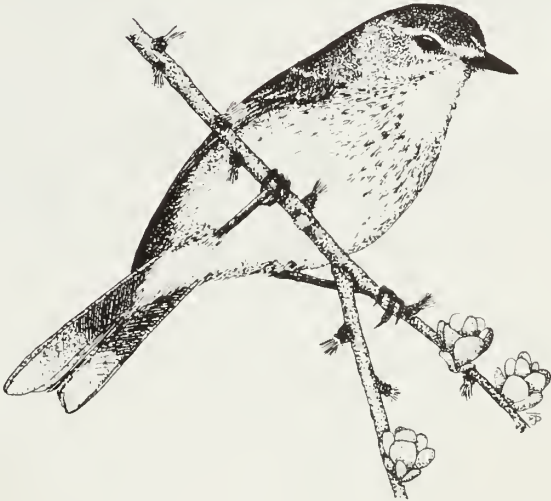
Average clutch range 4 to 5 eggs (13 nests).

INCUBATION PERIOD No information.

EGG DATES 10 nests, 25 May to 6 July (11 dates); 5 nests, 8 June to 25 June.

Breeding Distribution

The Palm Warbler (Fig. 152A) breeds throughout northern Ontario. In the south it occurs in only a few remnant bog habitats as far south as the Bruce Peninsula and Ottawa.



Bay-breasted Warbler, *Dendroica castanea* (Wilson)

Nidiology

RECORDS 16 nests representing 6 provincial regions.

Breeds in coniferous and mixed tree areas. The small sample size indicated a distinct preference for open coniferous (10 nests) stands with a heavy deciduous understory; nests in denser mixed (3 nests) and coniferous (2 nests) woods were usually near water or clearings (4 nests).

Nests were invariably in coniferous trees (4 spp., 15 nests), with black spruce (9 nests) preferred over white spruce (3 nests), balsam fir (2 nests), and jack pine (1 nest). Nest positions varied from near the top, to the lowest branch of the taller trees, with most located in the lower third of the tree. Nests were situated on horizontal branches and usually among numerous small branchlets. Distances from the trunk of 9 nests ranged from 0.3 to 2.4 m (1 to 8 ft), with 4 averaging 0.9 to 1.5 m (3 to 5 ft). Four nests were near or at the trunk. Heights of 15 nests ranged from 2.5 to 7 m (8 to 23 ft), with 7 averaging 3.5 to 5.5 m (11.5 to 18 ft).

Nests were described as cups, which were sometimes fragile and had thick rims and relatively thin bottoms. Their diameters measured larger than their depths. Nest exteriors were composed of twigs, grasses, weed stems, insect silk and spider webs, lichens, plant down, and bark shreds. Linings were characteristically of rootlets. Nine nests had outside diameters that ranged from 9 to 11 cm (3.5 to 4.3 inches), inside diameters from 4.5 to 6 cm (1.8 to 2.4 inches), outside depths from 4.5 to 6 cm (1.8 to 2.4 inches), and inside depths from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 12 nests with 4 to 6 eggs; 4E (1N), 5E (5N), 6E (6N).

Average clutch range 5 to 6 eggs (11 nests).

INCUBATION PERIOD No information.

EGG DATES 7 nests, 13 June to 3 July (8 dates); 4 nests, 18 June to 29 June.

Breeding Distribution

The Bay-breasted Warbler breeds throughout northern Ontario as far north as Ney Lake and Fort Albany. In the south it is scarce but has bred as far south as the northern tip of the Bruce Peninsula and Muskoka DM.

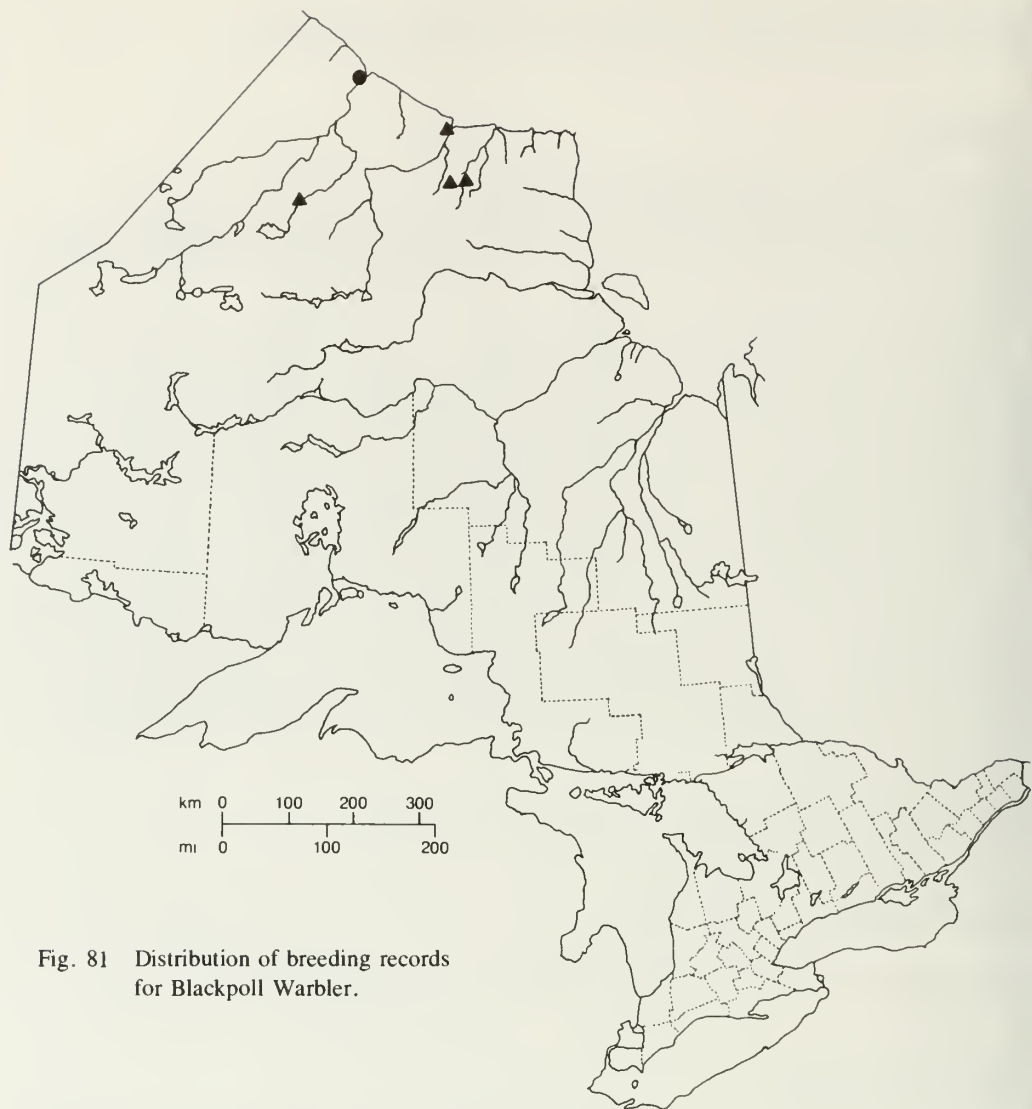


Fig. 81 Distribution of breeding records for Blackpoll Warbler.

Blackpoll Warbler, *Dendroica striata* (Forster)

Nidiology

RECORDS 5 nests representing 1 provincial region.

Only 5 nests of this northerly breeding warbler have been found to date in the province, 2 at Fort Severn, 1 at Hawley Lake, 1 at Winisk, and 1 on the Fawn River just north of the junction with the Little Otter River, all in the district of Kenora. Three nests were in wet spruce/tamarack muskeg; 1 was in a cutover spruce stand on mossy ground with associated growths of willow, poplar, and Labrador tea; and 1 was in a willow/poplar stand on a high river bank.

Two of the nests were on the ground at the base of willows, another was on the ground at the base of a tamarack, and a fourth at the base of a 4-m (13 ft) black spruce in lichens. The fifth nest was in a 0.6-m (2 ft) spruce tree at a height of 15 cm (6 inches). Nests were formed of dead grasses, weeds, and twigs, and were lined with feathers (Snow Goose feathers were noted in 1 nest). Three nests had outside diameters of 10, 9.5, and 9.5 cm (3.9 and 3.7 inches) and inside diameters of 6.5, 5, and 5 cm (2.6 and 2 inches); 2 nests had outside depths of 5 and 5 cm (2 inches) and inside depths of 3.5 and 3.5 cm (1.4 inches).

EGGS 4 nests, 3 with 4 eggs, 1 with 5 eggs.

INCUBATION PERIOD 1 nest, at least 10 days.

EGG DATES 4 nests, 18 June to 3 July (5 dates).

Breeding Distribution

The first nest of the Blackpoll Warbler (Fig. 152B) reported in Ontario was found in 1940 at Fort Severn (Baillie, 1960). Additional records are few, however, despite the abundance of these birds in the northern part of the province. Summer sightings indicate that it breeds in considerable numbers as far south as Big Trout Lake and Fort Albany, and probably on occasion at least to Sandy Lake and Moosonee.



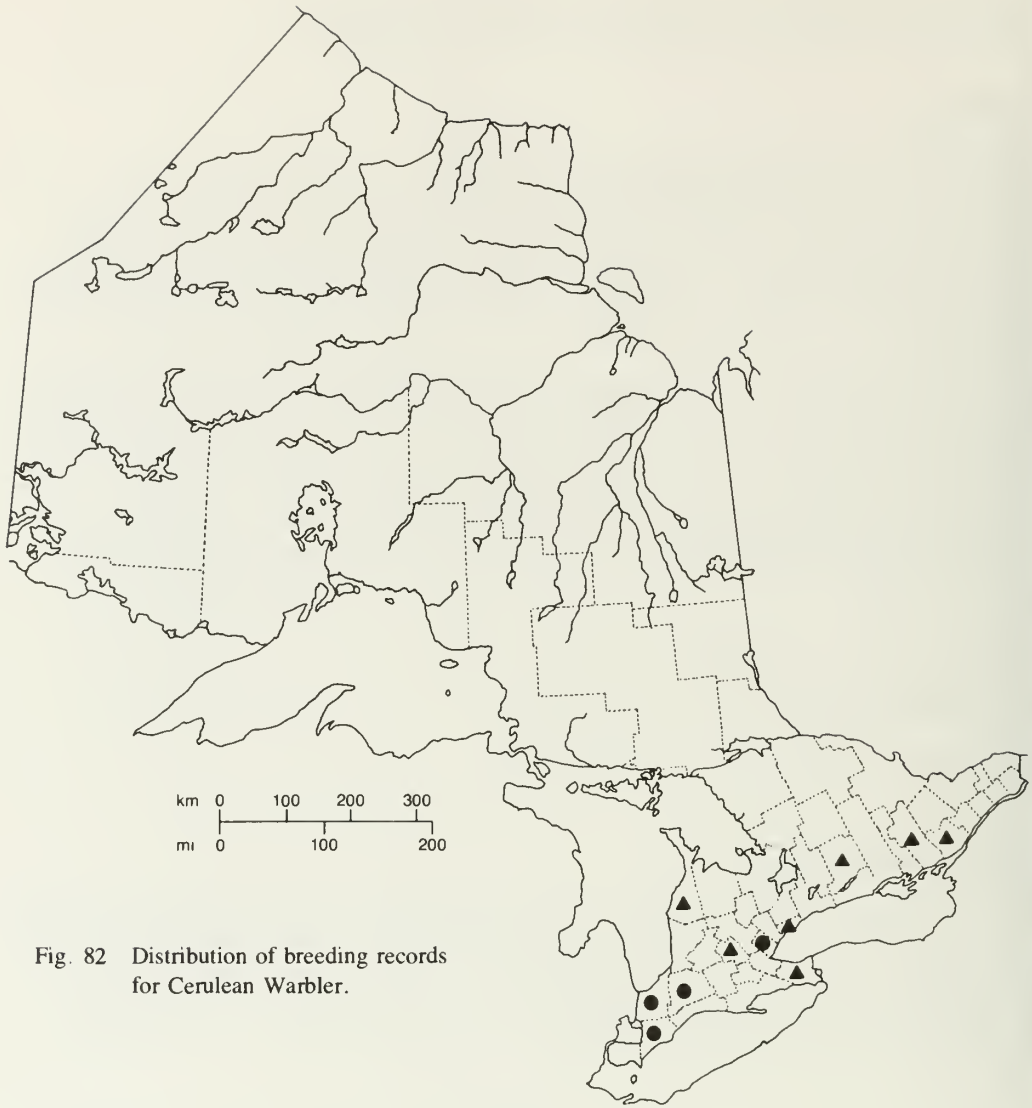


Fig. 82 Distribution of breeding records for Cerulean Warbler.

Cerulean Warbler, *Dendroica cerulea* (Wilson)

Nidiology

RECORDS 51 nests representing 10 provincial regions.

Breeds usually in second-growth and mature deciduous woods (Fig. 195); 1 record was in a mixed woods. The tree stands were usually open, and nests were often at the edges or near clearings. The specific requirements for breeding habitat were shown by the frequent finding of several pairs nesting in the same vicinity.

Nests were invariably in medium to large deciduous trees which, in order of preference, were oak spp. (15 nests), maple spp. (8 nests), basswood (4 nests), elm spp. (4 nests), and chestnut sp. (1 nest). The DBH of 10 nest trees ranged from 12.7 to 35.6 cm (5 to 14 inches). Nests were saddled on horizontal branches, often at forks, and invariably out from the main trunk. Distances from the trunk of 24 nests ranged from 1.2 to 6 m (4 to 20 ft), with 12 averaging 1.5 to 2.4 m (5 to 8 ft). The diameter at the nest of 5 branches ranged from 1.3 to 5 cm (0.5 to 2 inches). Heights of 38 nests ranged from 4.5 to 20 m (15 to 65 ft), with 19 averaging 9 to 12 m (30 to 40 ft).

Nests were neat, compact, shallow cups. Their exteriors were formed of bark strips (often silver-coloured), spider webs and egg cases, grasses, lichens, animal hair, plant fibres, and pine needles. Linings were of hair, fine grasses, fine bark strips, rootlets, and pine needles. Nine nests had outside diameters that ranged from 6 to 8 cm (2.4 to 3.1 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 4.5 to 7 cm (1.8 to 2.8 inches), and inside depths from 2.3 to 2.9 cm (0.9 to 1.1 inches).

EGGS 36 nests with 1 to 4 eggs; 1E (4N), 2E (2N), 3E (11N), 4E (19N).

Average clutch range 4 eggs (19 nests).

Cowbird parasitism 39 nests with 7 parasitized (17.9%).

INCUBATION PERIOD No information.

EGG DATES 36 nests, 24 May to 27 June (37 dates); 18 nests, 7 June to 14 June.

Breeding Distribution

The Cerulean Warbler breeds only in the southern part of Ontario as far north as Bruce, Simcoe, and Leeds counties.

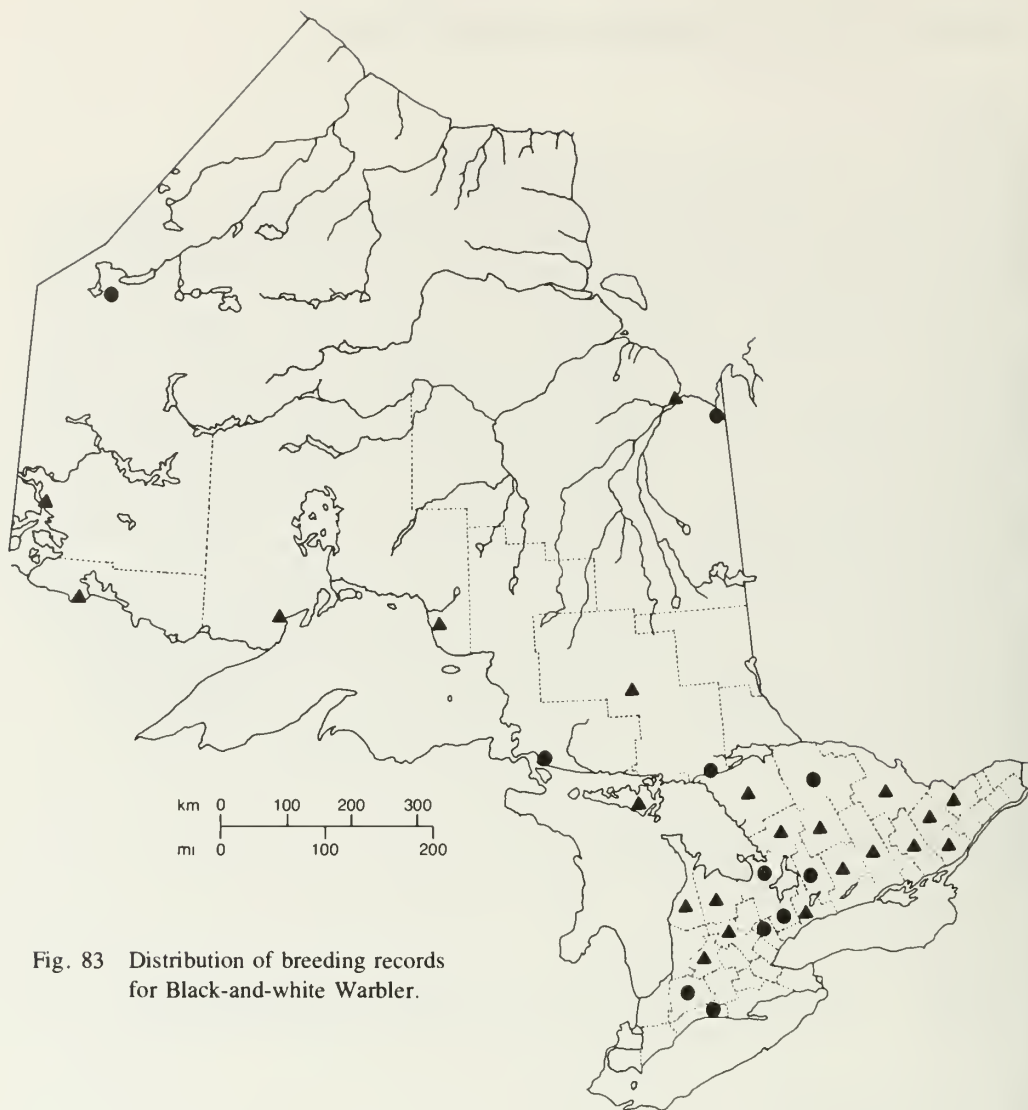


Fig. 83 Distribution of breeding records for Black-and-white Warbler.

Black-and-white Warbler, *Mniotilta varia* (Linnaeus)

Nidiology

RECORDS 50 nests representing 23 provincial regions.

Breeds in mixed (10 nests), coniferous (2 nests), deciduous (1 nest), and unspecified woods (12 nests); in a black spruce bog (1 nest); and in an alder swamp (1 nest). Eleven nests were at woodland edges or clearings, or were near roads or fencerows; 8 nests were in wet habitats, with the remainder in dry or unspecified sites.

Nests were most often on the ground (34 nests): at the bases of trees and stumps (commonly among roots) (19 nests); beside or under logs (4 nests); under bushes and shrubs, ferns, and overhead tree branches (4 nests); under dead branches and leaves (1 nest); and in a mossy hummock (1 nest). Some nests were elevated (12 nests): in stump cavities (1 had been excavated by a Pileated Woodpecker) (5 nests), in upturned roots (4 nests), in a rock crevice (1 nest), between 3 adjacent white cedar trunks (1 nest), and in a mossy bank (1 nest). Nests were usually concealed by overhanging branches or grasses, beneath bushes, or under roofs of dead deciduous leaves. Six elevated nests ranged in height from 0.2 to 1.8 m (0.7 to 6 ft).

Nests were described as deep, bulky cups of deciduous leaves, bark strips, grasses, plant stalks, pine needles and cedar fronds, mosses, twigs, and wood pieces. They were thinly lined with animal hair (often deer and porcupine), rootlets, and less often with fine grasses, leaf parts, bark strips, and fine twigs. Eight nests had outside diameters that ranged from 7.5 to 13 cm (3 to 5.1 inches), inside diameters from 4.5 to 7.8 cm (1.8 to 3.1 inches), outside depths from 4 to 12 cm (1.6 to 4.7 inches), and inside depths from 2.5 to 6 cm (1 to 2.4 inches).

EGGS 41 nests with 1 to 6 eggs; 1E (2N), 2E (1N), 3E (7N), 4E (16N), 5E (14N), 6E (1N).

Average clutch range 4 to 5 eggs (30 nests).

Cowbird parasitism 43 nests with 9 parasitized (20.9%).

INCUBATION PERIOD 1 nest, at least 11 days.

EGG DATES 29 nests, 22 May to 30 July (36 dates); 15 nests, 5 June to 30 June.

The protracted period of egg dates suggested the possibility of second broods, although none were documented.

Breeding Distribution

The Black-and-white Warbler breeds throughout the province as far north as Big Trout Lake and Fort Albany. In the south it becomes increasingly rare in the counties close to Lake Erie.

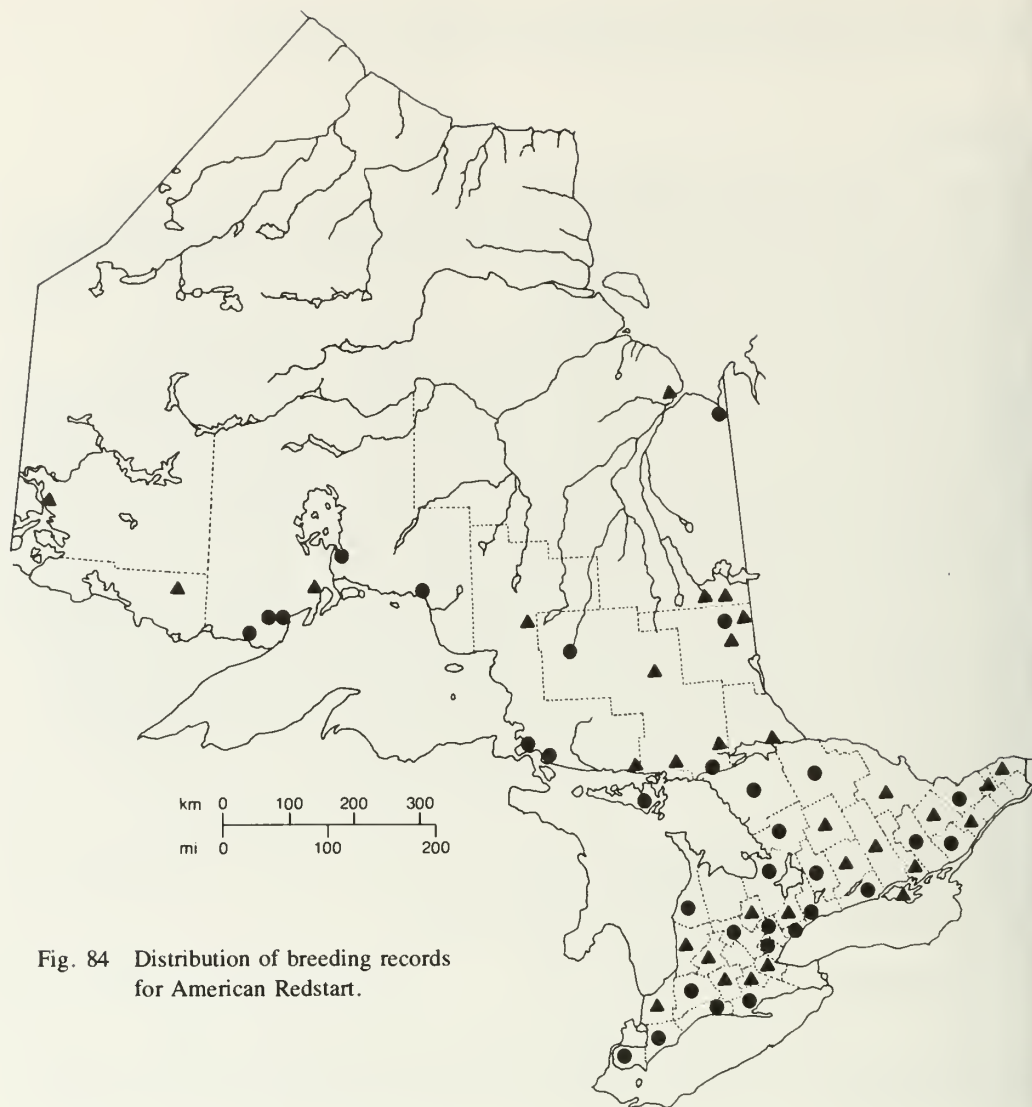


Fig. 84 Distribution of breeding records for American Redstart.

American Redstart, *Setophaga ruticilla* (Linnaeus)

Nidiology

RECORDS 397 nests representing 43 provincial regions.

Breeds usually in woodlands (75 nests), sometimes in shrubby fields (19 nests), and occasionally in dense stands of deciduous shrubs (5 nests). One nest record was in a garden. Woodlands selected were deciduous (38 nests), mixed (27 nests), coniferous (2 nests), and unspecified (6 nests). Second-growth woods or those with dense sapling understory and/or shrub growth were much preferred to mature woods. A number of nests were near wood and swamp edges, or beside roads or shorelines.

Nests (Fig. 168A) were elevated in saplings, shrubs, mature trees, and vines. Most nest trees and shrubs were living (8 dead). Saplings and shrubs were greatly preferred to mature trees, and deciduous species (22 spp., 160 nests) were selected much more often than coniferous species (6 spp., 13 nests). Those species most frequently chosen were maple spp. (53 nests), birch spp. (28 nests), ash spp. (15 nests), hawthorn spp. (12 nests), alder spp. (12 nests), and white cedar (8 nests). The DBH of 9 trees and saplings ranged from 3.8 to 17.8 cm (1.5 to 7 inches), with 5 averaging 5 to 10 cm (2 to 4 inches).

Nests were usually placed in upright main crotches (93 nests), with some on horizontal branches (5 nests), and 1 reported between 2 upright trunks. They were most often positioned against the main trunk, but some were away from it at distances ranging from 0.6 to 1.8 m (2 to 6 ft) (4 nests). One nest was 9 m (30 ft) distant from a nest of Chestnut-sided Warbler, and 15 m (50 ft) from a nest of Veery. Heights of 199 nests ranged from 0.3 to 15 m (1 to 50 ft), with 100 averaging 1.8 to 3.7 m (6 to 12 ft).

Nests were described as tightly woven, well-made cups whose exteriors were formed of bark strips (often birch bark), grasses, plant fibres, plant down, hair, spider and insect silk, rootlets, feathers, leaves, lichens, twigs, paper, string and wool thread, mosses, pine needles, and hornet nest paper. Linings were of grasses, rootlets, feathers, hair, plant down, bark fibres, pine needles, string, and duck down. Fifteen nests had outside diameters ranging from 6.5 to 8 cm (2.6 to 3.1 inches), inside diameters from 4 to 5.5 cm (1.6 to 2.2 inches), outside depths from 4 to 9 cm (1.6 to 3.5 inches), and inside depths from 3 to 5 cm (1.2 to 2 inches).

EGGS 172 nests with 1 to 5 eggs; 1E (8N), 2E (16N), 3E (28N), 4E (111N), 5E (9N).

Average clutch range 4 eggs (111 nests).

Eggs were laid at daily intervals and incubation commenced after the last egg had been laid.

Cowbird parasitism 285 nests with 57 parasitized (20%).

INCUBATION PERIOD 14 nests, 10 to 13 days: 2 of 10 days, 5 of 11 days, 4 of no more than 11 days, 2 of 12 days, and 1 of 13 days.

EGG DATES 218 nests, 27 May to 27 July (240 dates); 109 nests, 7 June to 21 June.

Breeding Distribution

Although specific records are lacking in the west, summer sightings indicate that the American Redstart (Fig. 168A) breeds across the province as far north as Favourable Lake and Moosonee.

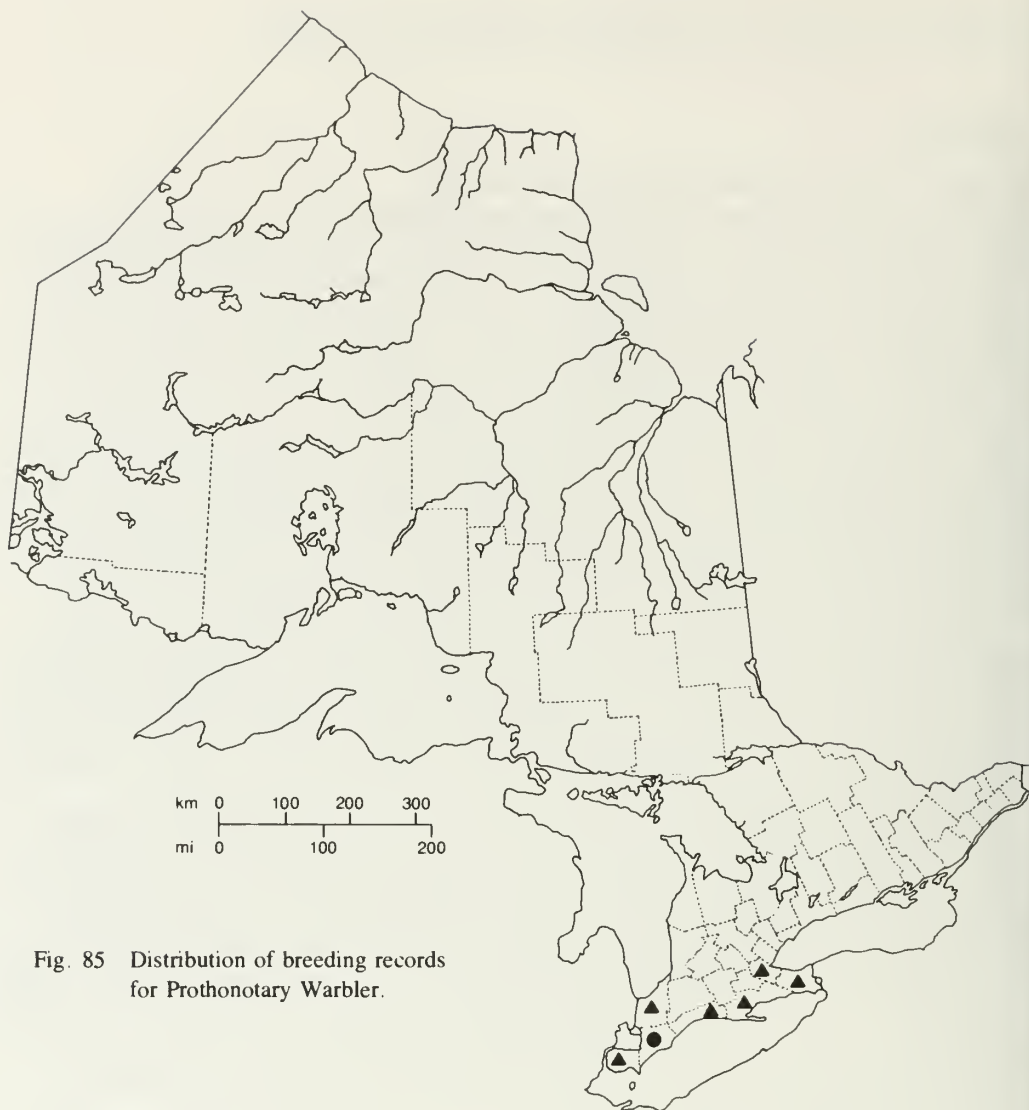


Fig. 85 Distribution of breeding records for Prothonotary Warbler.

Prothonotary Warbler, *Protonotaria citrea* (Boddaert)

Nidiology

RECORDS 74 (76 nests) representing 6 provincial regions.

The Prothonotary Warbler is a southern species and the only warbler in Ontario that nests strictly in cavities (Fig. 198A). It breeds invariably in deciduous swamps (Fig. 197), most of which are treed and a few of which mainly support growths of shrubs and small trees. Tree stands recorded were mature maple/beech/ash/oak forests (44 nests in Rondeau Provincial Park), silver maple woods (5 nests), and growths of buttonbush and dogwood (4 nests). Many nest sites were in relatively open areas.

Nests were always above or at the edge of water, and, where specified, were most often in natural cavities (24 nests) and less often in former woodpecker cavities (5 nests). Cavities were in standing tree stumps (44 nests), standing dead trees (11 nests), and fallen branches (3 nests). A very few nest cavities were recorded in living or partially living trees. Deciduous species reported to contain nest cavities were maple spp. (5 nests), ash spp. (2 nests), basswood (1 nest), birch sp. (1 nest), and buttonbush (1 nest). An unusual site was that of a cavity in a detached branch stub that was suspended vertically from an attached branch of a dead tree. One record described the use of the same cavity in 2 successive years. The bole diameters at the nest cavity for 7 stumps, stubs, and trees ranged from 10 to 45.5 cm (4 to 18 inches). Heights above water of 57 nests ranged from 0.3 to 3 m (1 to 10 ft), with 29 averaging 0.9 to 1.7 m (3 to 5.5 ft).

Both large and small nest cavity openings were reported. One opening measured 7.5 by 10 cm (3 by 4 inches). Cavities were often shallow, and 6 vertical cavities ranged in depth from 2.5 to 30.5 cm (1 to 12 inches). Two atypical cavities were horizontal from the entrance and consequently had no depth below the entrance. Nest cavities were packed with grasses, mosses and lichens, deciduous leaves, and plant stalks. Nest linings were of fine grasses, rootlets, hair, and, rarely, feathers. Five nests had outside diameters that ranged from 8 to 10 cm (3.1 to 4 inches), inside diameters from 5 to 6 cm (2 to 2.4 inches), outside depths from 4 to 6 cm (1.6 to 2.4 inches), and inside depths from 2 to 3 cm (0.8 to 1.2 inches). It should be noted that outside diameters may reflect cavity width, and that outside depths are biased by the amount of material pulled from the cavity when the nest was collected.

EGGS 33 nests with 1 to 6 eggs; 1E (1N), 2E (1N), 3E (4N), 4E (11N), 5E (13N), 6E (3N).

Average clutch range 4 to 5 eggs (24 nests).

A nest record from Welland County described hybridization with Yellow Warbler. The hybrid young were reared in captivity (Gunn, 1956).

Cowbird parasitism 34 nests with 12 parasitized (35.3%) (Fig. 204B).

One nest contained 7 eggs of cowbird and 3 eggs of the host; a second nest contained 7 cowbird eggs only.

INCUBATION PERIOD 2 nests: 1 of at least 10 days, 1 of ca 11 days.

EGG DATES 27 nests, 25 May to 3 July (33 dates); 13 nests, 8 June to 13 June.

There is some evidence suggesting occasional double broods, although none were reported.

Breeding Distribution

Available breeding records for the Prothonotary Warbler (Fig. 198A) are all confined to the Deciduous Forest region, with most from Kent and Essex counties.

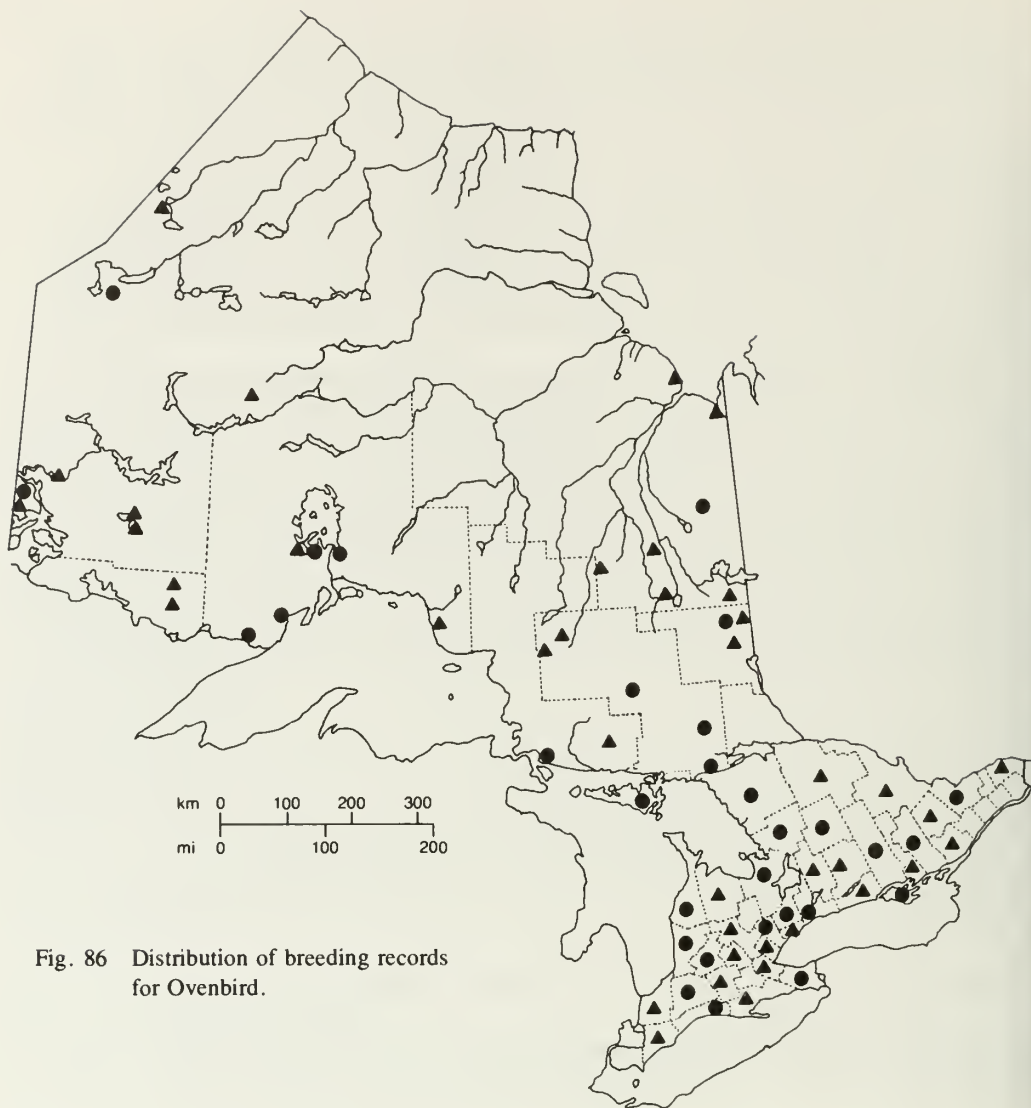


Fig. 86 Distribution of breeding records for Ovenbird.

Ovenbird, *Seiurus aurocapillus* (Linnaeus)

Nidiology

RECORDS 284 nests representing 43 provincial regions.

Breeds in mixed (76 nests), deciduous (70 nests), coniferous (21 nests), and unspecified (26 nests) woodlands. Open woods with little understory appeared to be preferred to dense woods with heavy understory. A number of nests were at woodland edges or near clearings, or beside paths and logging roads, and wet and dry habitats were both used without evidence of preference.

Nests were invariably on the ground and most were in areas with a heavy dead-leaf ground cover. Some nests were among ferns, grasses, and other green herbaceous plants (55 nests), and others were at the bases of trees, saplings, shrubs, and stumps (43 nests) and were often concealed by overhead branches. A few were under fallen branches (8 nests) and in moss hummocks (3 nests), and 1 nest was under arched tree roots. Although most nests were hidden in surrounding vegetation, 3 were described as exposed. A few nests were noted to be in depressions in the ground and others were on level ground or not specified.

Nests were characteristically domed or roofed-over (usually with dead leaves), and were often described as oven-shaped with the entrance at 1 side. Exteriors were composed of leaves, grasses, plant stalks and fibres, pine needles, bark strips, rootlets, fern fronds, twigs, hair, mosses, and plant down. Linings were woven of grasses, leaves, hair, plant stalks, rootlets (1 nest contained black thread), bark fibres, and mosses. Because of the shape of the nest, with its roof and side entrance, 2 measurements are presented for outside and for inside diameters. Nine nests had outside diameters ranging from 8.5 to 12 by 13 to 16 cm (3.3 to 4.7 by 5.1 to 6.3 inches), inside diameters from 4 to 6.5 by 5 to 8 cm (1.6 to 2.6 by 2 to 3.1 inches), outside depths from 9 to 12.5 cm (3.5 to 4.9 inches), and inside depths from 5 to 7 cm (2 to 2.8 inches).

EGGS 182 nests with 1 to 6 eggs; 1E (4N), 2E (4N), 3E (21N), 4E (79N), 5E (70N), 6E (4N).

Average clutch range 4 to 5 eggs (149 nests).

Because of the frequency of renesting in this species, it was noted that 5-egg clutches were the most common number in first nestings (May–June), and 4-egg clutches the commonest in later nestings (July).

Cowbird parasitism 260 nests with 31 parasitized (11.9%).

The amount of parasitism in Ontario is notably less for this species than is the case in other parts of its range (Friedmann, 1963).

INCUBATION PERIOD 5 nests: 2 of at least 11 days, 2 of 12 days, 1 of at least 12 days.

EGG DATES 207 nests, 21 May to 28 July (227 dates); 103 nests, 6 June to 20 June.

Renestings were reported, and their frequency further indicated by the number of July egg dates following a marked drop-off in late June egg dates.

Breeding Distribution

The Ovenbird breeds across the province as far north as Ney Lake and Fort Albany.

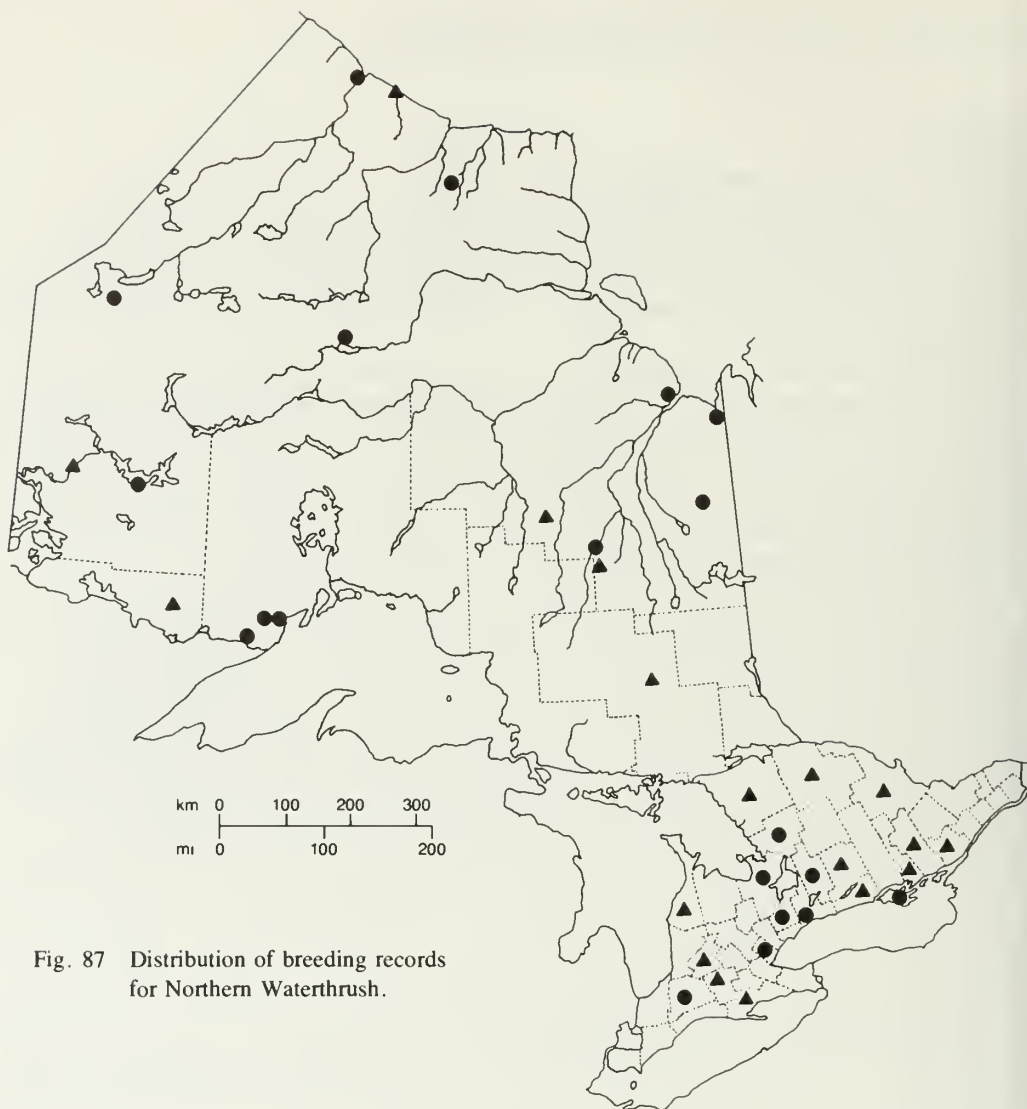


Fig. 87 Distribution of breeding records for Northern Waterthrush.

Northern Waterthrush, *Seiurus noveboracensis* (Gmelin)

Nidiology

RECORDS 91 nests representing 22 provincial regions.

Breeds in moist or flooded woods (38 nests), with mixed, deciduous, and coniferous stands selected in that order; in wooded areas beside lakes, ponds, rivers, and streams (11 nests); at edges of marshes and beaver ponds (2 nests); in black spruce and sphagnum bogs (2 nests); in a dry woods (1 nest); and in unspecified woods (5 nests).

Nests were variously positioned in upturned roots of trees (34 nests), among roots or in cavities near the bases of standing trees and stumps (22 nests), in depressions in earthen banks of streams and rivers (10 nests), in moss-covered hummocks and logs (8 nests), under a log (1 nest), under balsam fir branches (1 nest), and in the side of a water-filled depression in a swamp (1 nest). They were usually well concealed, and either were at ground level or in stream banks (22 nests), or were elevated usually above water and occasionally above ground to heights which ranged from 0.2 to 1.2 m (0.5 to 4 ft) (19 nests). One nest was reused the following year, and another was situated just below a previous year's nest.

Nests (Fig. 198B) were usually substantial structures (1 was described as frail) with rough exteriors and neatly lined interiors. Exteriors were composed of mosses, grasses, leaves, rootlets, twigs, hair, bark, lichens, and an unspecified stem. Linings were of hair (2 were rabbit fur), rootlets (4 were goldthread), grasses, mosses, porcupine quills, feathers, and unspecified stems and fibres. Two nest depressions in banks were 10 cm (4 inches) in depth. Six nests had outside diameters that ranged from 8 to 11.5 cm (3.1 to 4.5 inches), inside diameters from 4.5 to 6 cm (1.8 to 2.4 inches), outside depths from 4 to 6 cm (1.6 to 2.4 inches), and inside depths from 2 to 4 cm (0.8 to 1.6 inches).

EGGS 69 nests with 1 to 5 eggs; 1E (3N), 2E (3N), 3E (9N), 4E (36N), 5E (18N).

Average clutch range 4 eggs (36 nests).

Cowbird parasitism 83 nests with 11 parasitized (13.3%).

INCUBATION PERIOD 1 nest, not more than 14 days.

EGG DATES 52 nests, 15 May to 3 July (62 dates); 26 nests, 27 May to 4 June.

Breeding Distribution

The Northern Waterthrush breeds throughout Ontario, although it is less common in the extreme south.



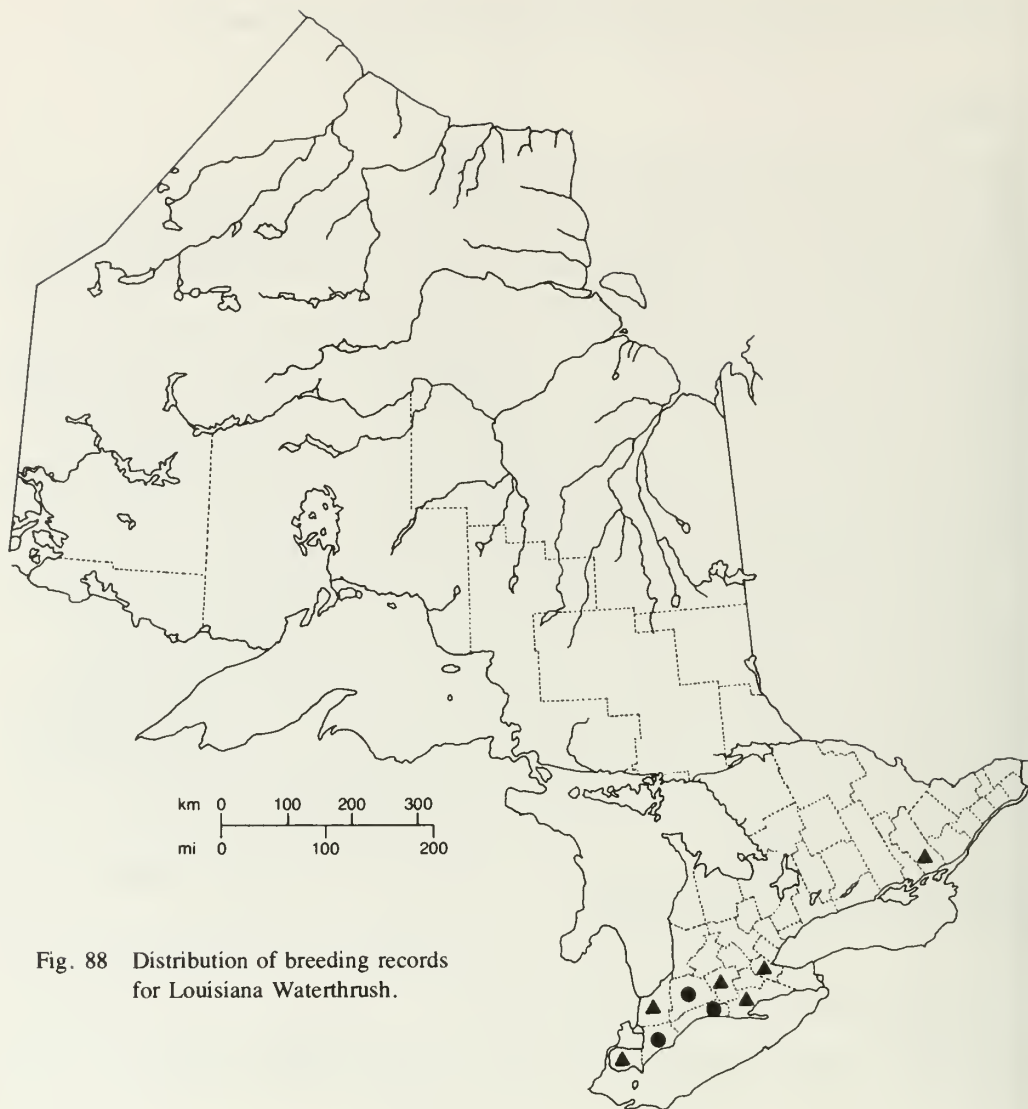


Fig. 88 Distribution of breeding records for Louisiana Waterthrush.

Louisiana Waterthrush, *Seiurus motacilla* (Vieillot)

Nidiology

RECORDS 10 nests representing 9 provincial regions.

Breeds in deciduous woods which are swampy or contain flowing streams with more or less vertical earthen banks.

Nests were variously located in depressions in earthen banks of streams and pools (4 nests), and in natural cavities of water-surrounded stumps (2 nests). Heights above water of 5 nests were 0.2, 0.3, 0.9, 1, and 1.2 m (0.7, 1, 3, 3.3, and 4 ft).

Nests were cups with bulky bases, and those in banks were concealed by roots and hanging vegetation. Nest bases were of deciduous leaves and mosses; interiors were lined with fine grasses and animal hair. Two nests had outside diameters of 12 and 13 cm (4.7 and 5.1 inches), inside diameters of 5.5 and 6 cm (2.2 and 2.4 inches), outside depths of 6 and 7.5 cm (2.4 and 3 inches), and inside depths of 4 and 4.5 cm (1.6 and 1.8 inches).

EGGS 6 nests with 2 to 5 eggs; 2E (1N), 3E (2N), 4E (2N), 5E (1N).

Average clutch range 4 to 5 eggs (3 nests).

Cowbird parasitism 8 nests with 2 parasitized (25%).

INCUBATION PERIOD No information.

EGG DATES 4 nests, 1 June, 2 June, 20 June, 8 July.

Breeding Distribution

The Louisiana Waterthrush nests mainly in extreme southern Ontario in the Deciduous Forest region, and rarely in the Kingston area of Frontenac County.



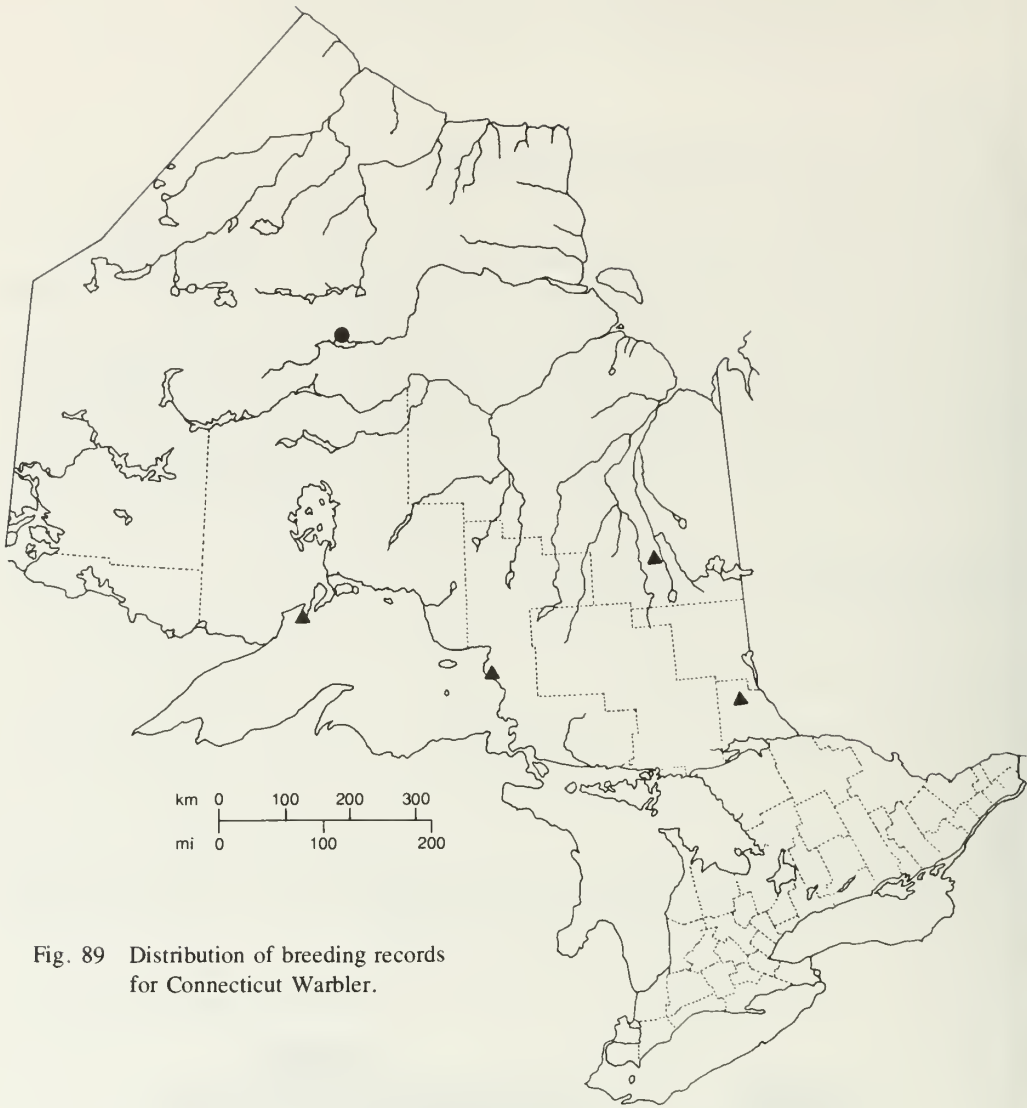


Fig. 89 Distribution of breeding records for Connecticut Warbler.

Connecticut Warbler, *Oporornis agilis* (Wilson)

Nidiology

RECORDS 1 nest (undocumented) representing 1 provincial region.

Based on observations from breeding areas other than Ontario, the nest of this warbler is exceedingly difficult to discover.

Our only nest record involved the sighting on 24 July 1971 of 3 young leaving a nest in Sibley Provincial Park, Thunder Bay District. The nest was in a logged area of dense undergrowth. It was composed of grasses and sedge stems, with a finer lining of delicate plant fibres and a few hairs. The nest was on the ground in a raspberry thicket.

Breeding Distribution

The Connecticut Warbler is a regular summer resident across northern Ontario at least as far north as Sachigo Lake and Fort Albany, and south to Wawa and Cochrane. A breeding record from northern Nipissing District indicates at least occasional nesting farther south. This range is based largely upon the presence of singing males during the summer months. Despite its extensive range, nesting or breeding have not been adequately documented. Adults were observed feeding young at Lake Superior Provincial Park (Baillie and Harrington, 1937) and near Cochrane (Baillie, 1950), and a fledged and flying young was taken at Attawapiskat Lake on 15 August 1939 (ROM 32784). We can only assume that these birds were raised locally or that the observed birds were correctly identified. Unfortunately the only nesting thus far reported went undocumented (Peck, 1976).



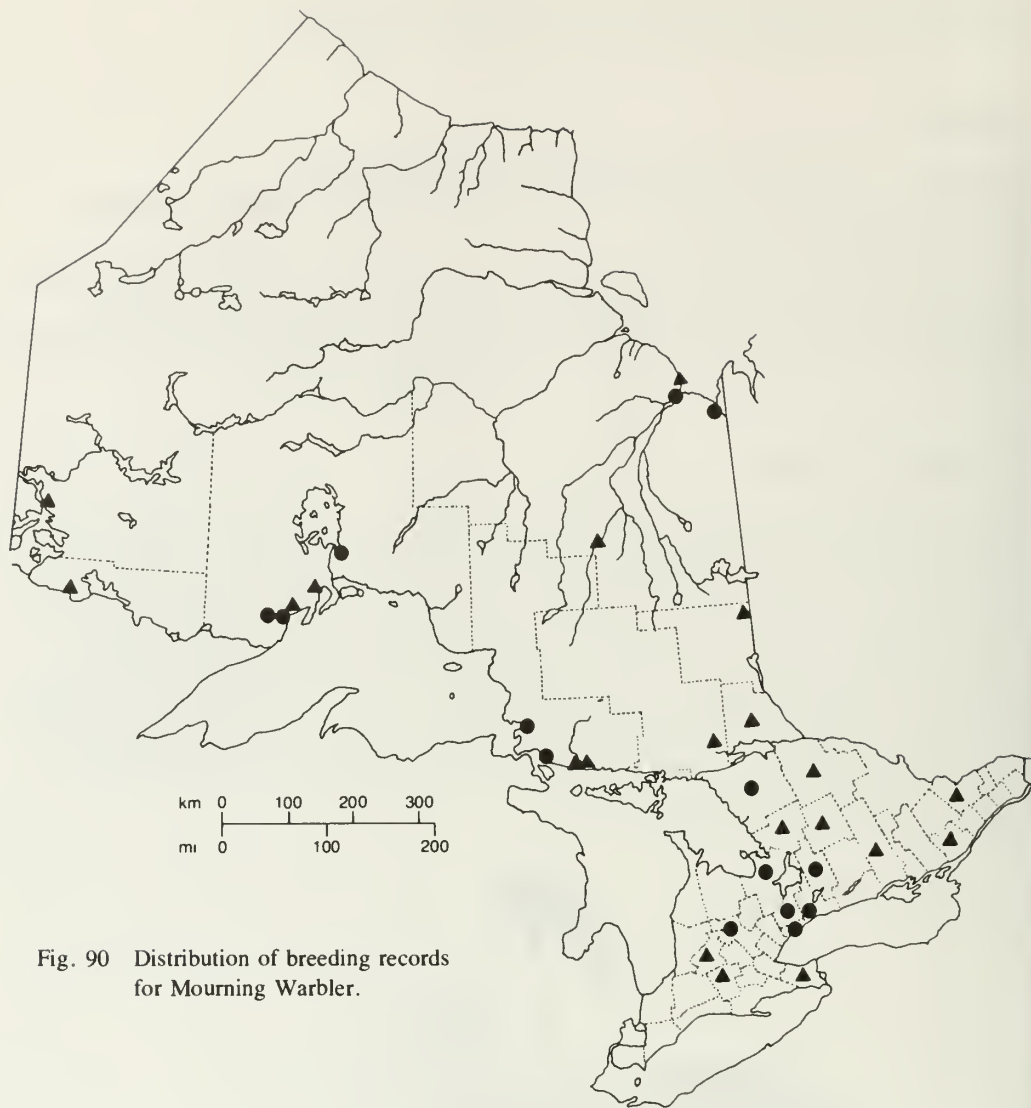


Fig. 90 Distribution of breeding records for Mourning Warbler.

Mourning Warbler, *Oporornis philadelphia* (Wilson)

Nidiology

RECORDS 34 nests representing 20 provincial regions.

Breeds in mixed (7 nests), deciduous (2 nests), coniferous (1 nest), and unspecified (10 nests) woods, all with a dense understory. Either these wooded areas were open, or nests were at wood edges (Fig. 177), in clearings, or near roadsides. Three nests were in a brushy thicket, an alder swale, and a deciduous scrub (alder/willow/dogwood), respectively; 2 were in residential gardens; and 1 in a burn. Seven nests were reported to be in damp or swampy areas.

Nests were positioned in or among plant stalks, raspberry canes, fern fronds, grasses, and garden flowers, and in hazel stems. One nest was in a brush pile and another was on a sedge clump. Most nest positions ranged from ground level (10 nests) to elevations up to 15 cm (6 inches) (9 nests); 2 nests were at heights of 0.3 m (1 ft), 2 were at 0.6 m (2 ft), and 1 was at 0.9 m (3 ft).

Nests were cups with loosely built exteriors of grasses, leaves, plant stalks and fibres, bark strips, rootlets, hair, and spider webs. Linings were of rootlets (usually black), animal hair, fine grasses, and tendrils. Seven nests had outside diameters ranging from 10 to 15 cm (4 to 6 inches), inside diameters from 4 to 5 cm (1.6 to 2 inches), outside depths from 6 to 13 cm (2.4 to 5.1 inches), and inside depths from 3.5 to 4.5 cm (1.4 to 1.8 inches).

EGGS 29 nests with 1 to 5 eggs; 1E (2N), 2E (3N), 3E (8N), 4E (12N), 5E (4N).

Average clutch range 3 to 4 eggs (20 nests).

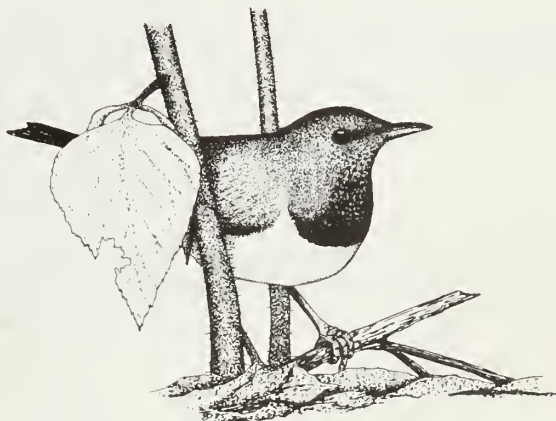
Cowbird parasitism 30 nests with 3 parasitized (10%).

INCUBATION PERIOD 1 nest, at least 11 days.

EGG DATES 22 nests, 25 May to 20 July (28 dates); 11 nests, 14 June to 24 June.

Breeding Distribution

The Mourning Warbler (Fig. 178A) breeds across the province at least as far north as Big Trout Lake and Fort Albany.



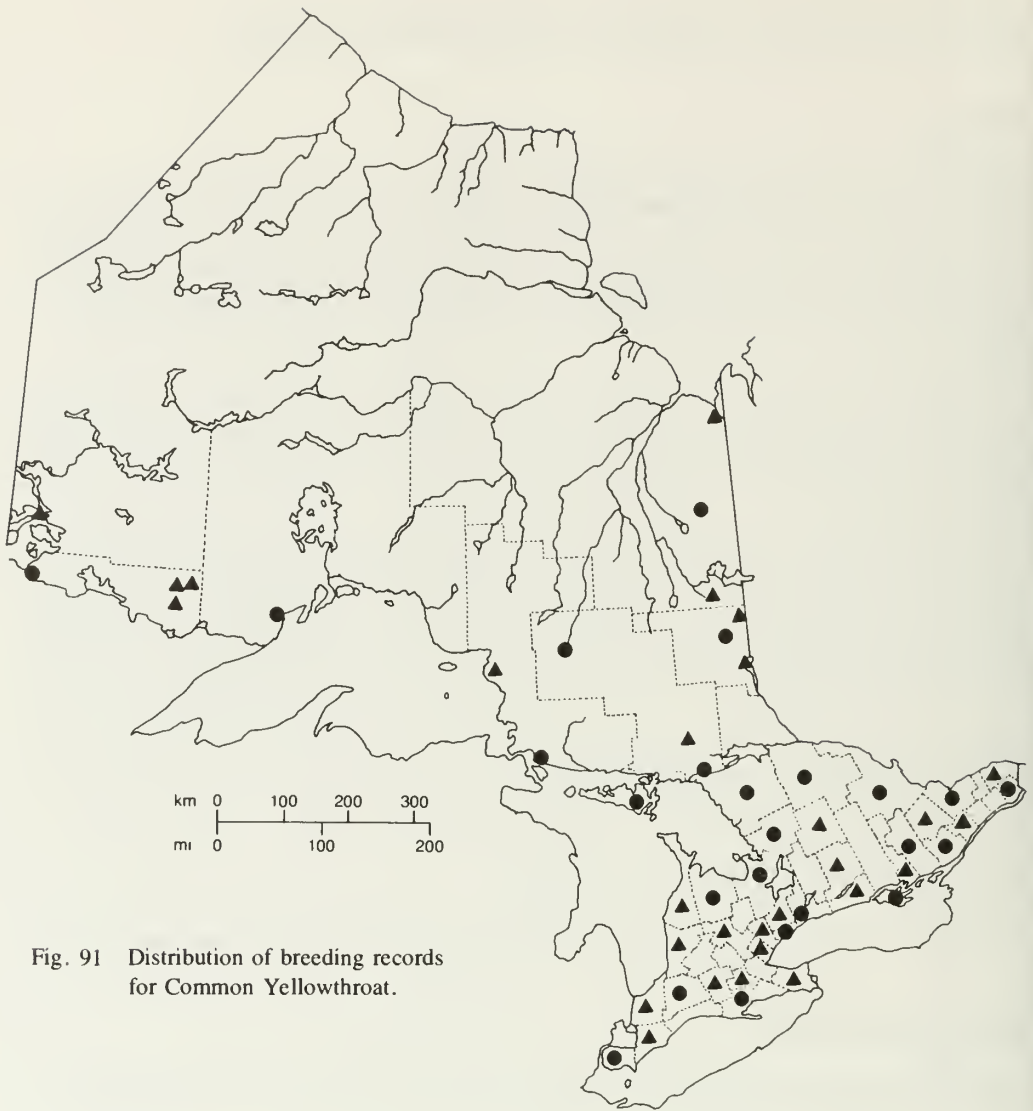


Fig. 91 Distribution of breeding records for Common Yellowthroat.

Common Yellowthroat, *Geothlypis trichas* (Linnaeus)

Nidiology

RECORDS 184 nests representing 39 provincial regions.

Breeds usually in wet (98 nests), and less often in relatively dry (20 nests) areas. Wet areas included sedge/grass/rush meadows and other marshy ground (36 nests); cattail and bulrush marshes (28 nests); bogs (16 nests); edges of lakes, rivers, and ponds (12 nests); and open, wooded swamps (6 nests). Dry areas included brushy sites (12 nests), grassy fields (7 nests), and a woodland edge at a road (1 nest). Nest sites typically had tall, dense growths of rushes, grasses, sedges, and various shrubs occurring either singly or in combination.

An equal number of nests were on or near the ground (61 nests), or were elevated a short distance above ground (61 nests). Nests were usually well concealed. They were variously positioned: among sedge or grass stems (73 nests), among stems of shrubs (24 nests), attached to cattail or bulrush stems (15 nests), attached to both grasses and shrubs (8 nests), under boughs of shrubs or small trees (8 nests), among plant stalks (4 nests), beside fallen logs (2 nests), and near the top of a shrub (1 nest). Nine species of deciduous shrubs and 1 coniferous tree were used for some of the elevated nests. One nest was reported 6 m (20 ft) distant from an active nest of Song Sparrow. Heights of 61 elevated nests ranged from 0.2 to 1.4 m (0.5 to 4.4 ft), with 31 averaging 0.2 to 0.3 m (0.5 to 1 ft).

Most nests were described as neat, compact cups with rough exteriors, although some were noted to be bulky. Exteriors were typically woven of sedges and grasses, and other outer materials were leaves, plant stalks, bark strips, hair, and twigs. Linings were typically of fine grasses or sedges, and sometimes included were rootlets, leaf scraps, mosses, hair, and pine needles. Ten nests had outside diameters ranging from 8 to 12.5 cm (3.1 to 4.9 inches), inside diameters from 4 to 6.5 cm (1.6 to 2.6 inches), outside depths from 6 to 9 cm (2.4 to 3.5 inches), and inside depths from 2.5 to 5.5 cm (1 to 2.2 inches).

EGGS 106 nests with 1 to 5 eggs; 1E (5N), 2E (6N), 3E (13N), 4E (60N), 5E (22N).

Average clutch range 4 eggs (60 nests).

Cowbird parasitism 168 nests with 32 parasitized (19%).

One nest contained 2 eggs of Common Yellowthroat and 6 eggs of cowbird.

INCUBATION PERIOD 1 nest, ca 14 days.

EGG DATES 135 nests, 19 May to 29 July (146 dates); 68 nests, 7 June to 22 June.

One nest contained 2 eggs and 2 young of unknown age on 15 August, indicating a later egg date than the listed extreme. The protracted period of egg dates suggested double broods, although none were reported.

Breeding Distribution

Although rather scarce in most parts of its range that lie in the Boreal and Hudson Bay Lowland forest regions, the Common Yellowthroat breeds across the province almost as far north as Big Trout Lake and Fort Albany.

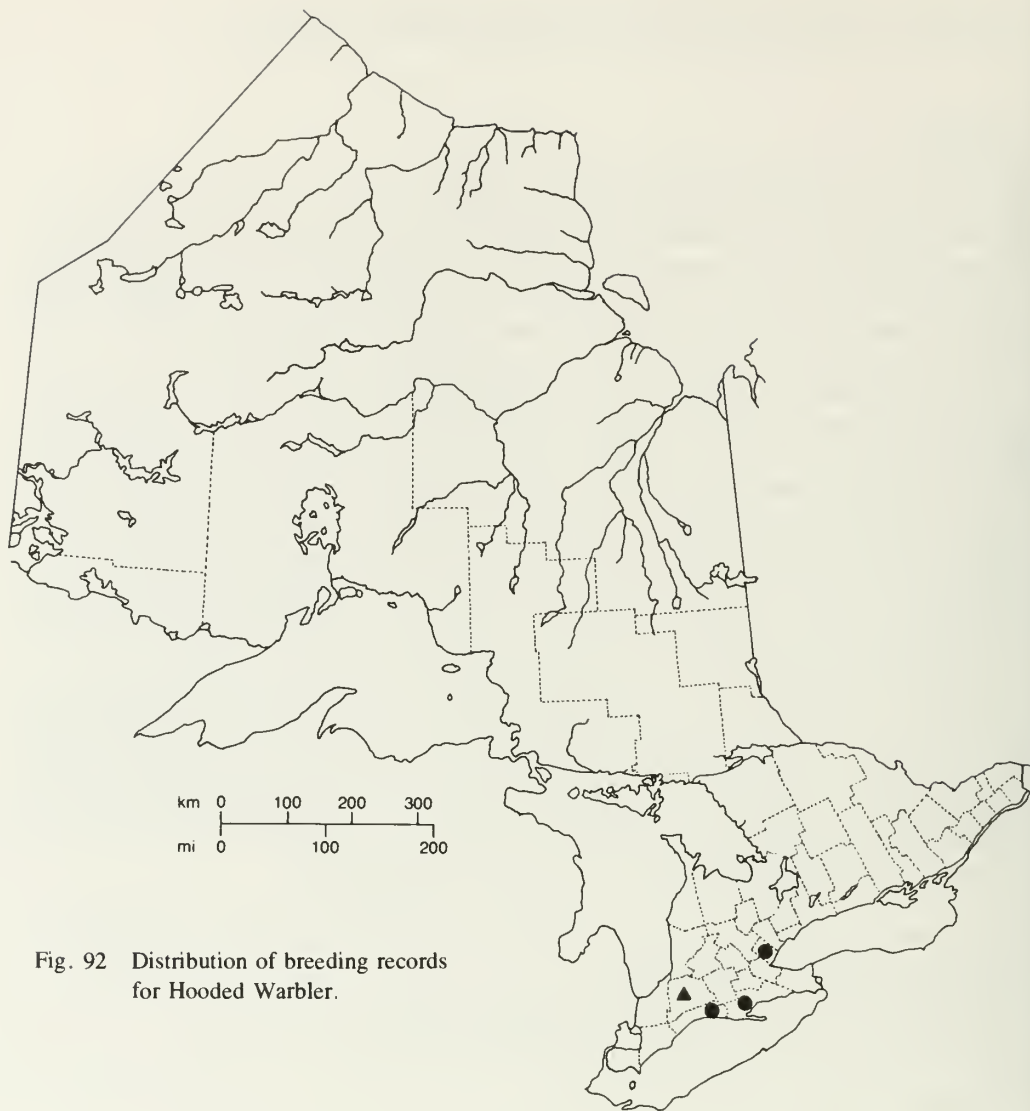


Fig. 92 Distribution of breeding records for Hooded Warbler.

Hooded Warbler, *Wilsonia citrina* (Boddaert)

Nidiology

RECORDS 8 nests representing 4 provincial regions.

This southern warbler has been found nesting in Ontario on only 8 occasions. Seven of the nests were in deciduous woods (Fig. 195), and 1 was in a mixed woods. All of the wooded habitats had a characteristic understory of deciduous saplings and shrubs. One of the deciduous stands was on rolling sand ridges, and the nest was at the edge of a clearing.

Two of the nests were in maple spp. saplings, 2 were in crotches of maple-leaved viburnums, 1 was in a crotch of bracken fern, 2 were in *Rubus* spp. canes, and 1 was at the confluence of 3 tiny basswood saplings. Heights of 6 nests were 0.3, 0.3, 0.5, 0.6, 0.8, and 1 m (1, 1.5, 2, 2.5, and 3.3 ft), respectively.

Nests were neatly constructed of bark strips, with dead leaves concealing much of the exterior (maple spp. leaves in 1 nest). Nests were lined with grasses, fine rootlets, and pine needles, and 1 with rootlets only. Three nests had outside diameters of 7, 8.5, and 9.5 cm (2.8, 3.3, and 3.7 inches); inside diameters of 4, 5, and 5.5 cm (1.6, 2, and 2.2 inches); outside depths of 6, 8, and 8 cm (2.4 and 3.1 inches); and inside depths of 3, 3.5, and 3.5 cm (1.2 and 1.4 inches).

EGGS 5 nests with 1 to 4 eggs; 1E (1N), 3E (2N), 4E (2N).

Cowbird parasitism 6 nests with 4 parasitized (67%).

INCUBATION PERIOD No information.

EGG DATES 5 nests, 9 June to 27 July (6 dates).

Breeding Distribution

The first nest of the Hooded Warbler to be found in Ontario was located only in 1949, although records of its occurrence date back to 1878 (Baillie, 1962). The species' population remains very low in the province, with the result that only a few additional nests have been found. The only area of Ontario where it is known to breed is the Deciduous Forest region.



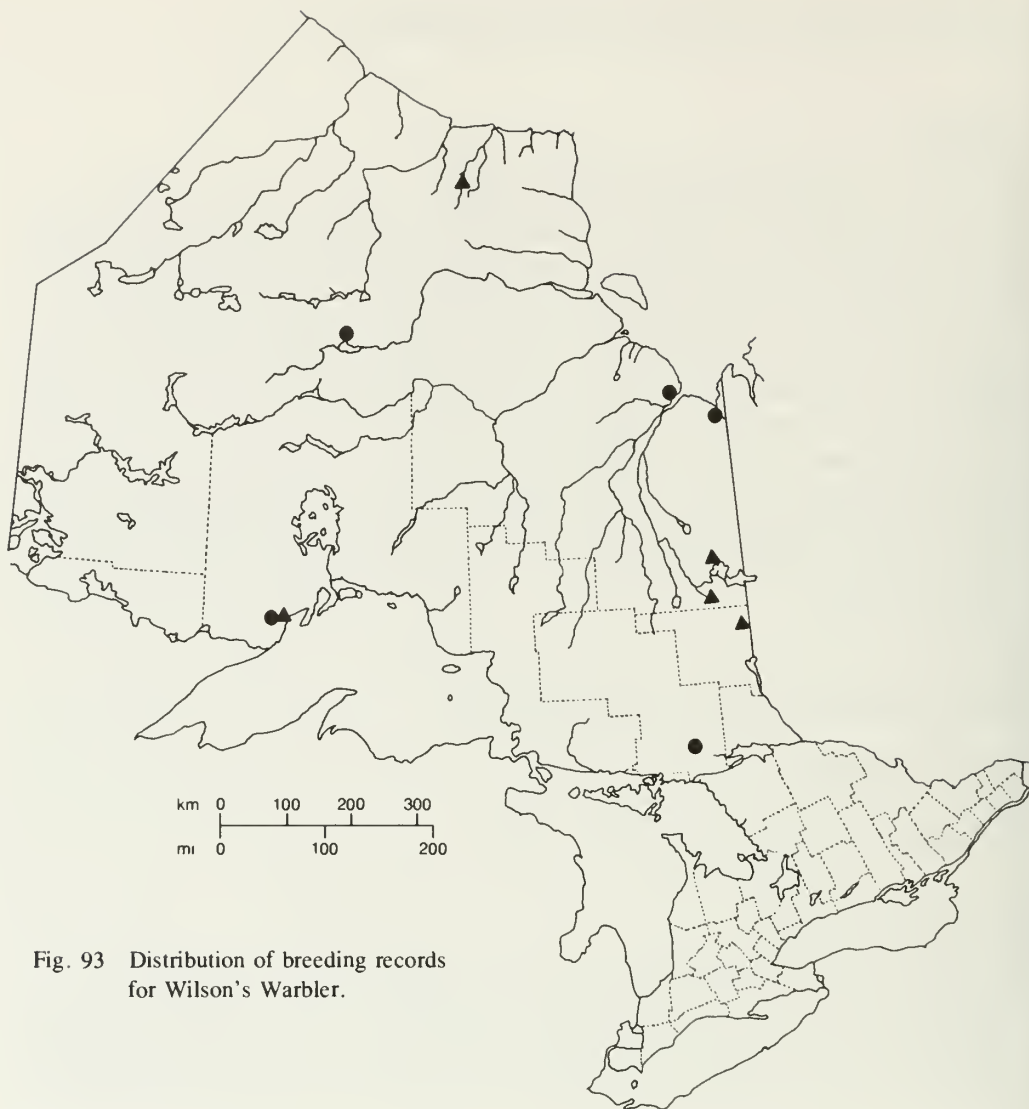


Fig. 93 Distribution of breeding records for Wilson's Warbler.

Wilson's Warbler, *Wilsonia pusilla* (Wilson)

Nidiology

RECORDS 13 nests representing 5 provincial regions.

Breeds in alder/willow swamps (Fig. 159) with associated growths of black spruce, tamarack, dwarf birch, and Labrador tea (6 nests); in grass, weed, and briar areas near streams and ponds (3 nests); and in a drained area with dead cedars (1 nest). Where specified, all habitats were wet.

All nests were on the ground, sunken in grass or moss hummocks, or grass or weed clumps. One nest was under the edge of a small bank in a low area. Four nests were at the bases of small trees, such as willow, cedar, and tamarack.

Nests were small cups with exteriors of grasses, leaves, weed stalks, and bark strips. Linings were of fine grasses and occasionally some black rootlets. One nest was entirely made of fine grasses. Six nests had outside diameters that ranged from 7 to 11 cm (2.8 to 4.3 inches), inside diameters from 4 to 5.5 cm (1.6 to 2.2 inches), outside depths from 5 to 5.5 cm (2 to 2.2 inches), and inside depths from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 12 nests with 3 to 5 eggs; 3E (1N), 4E (2N), 5E (9N).

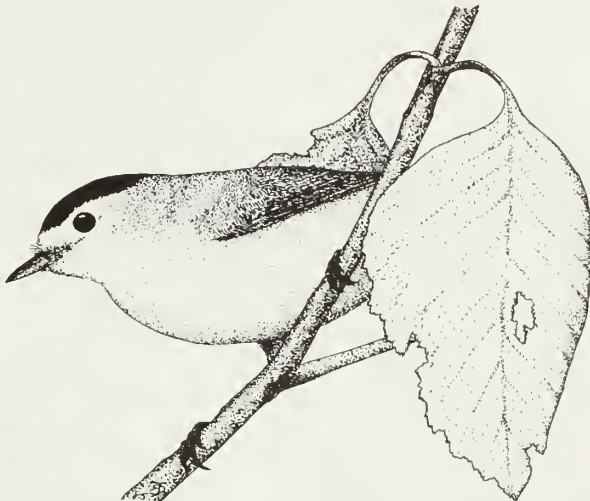
Average clutch range 5 eggs (9 nests).

INCUBATION PERIOD No information.

EGG DATES 7 nests, 8 June to 3 July (8 dates); 4 nests, 16 June to 22 June.

Breeding Distribution

The Wilson's Warbler breeds throughout northern Ontario. The species is not believed to breed in southern Ontario, although there are a few unsubstantiated reports from areas on the Canadian Shield.



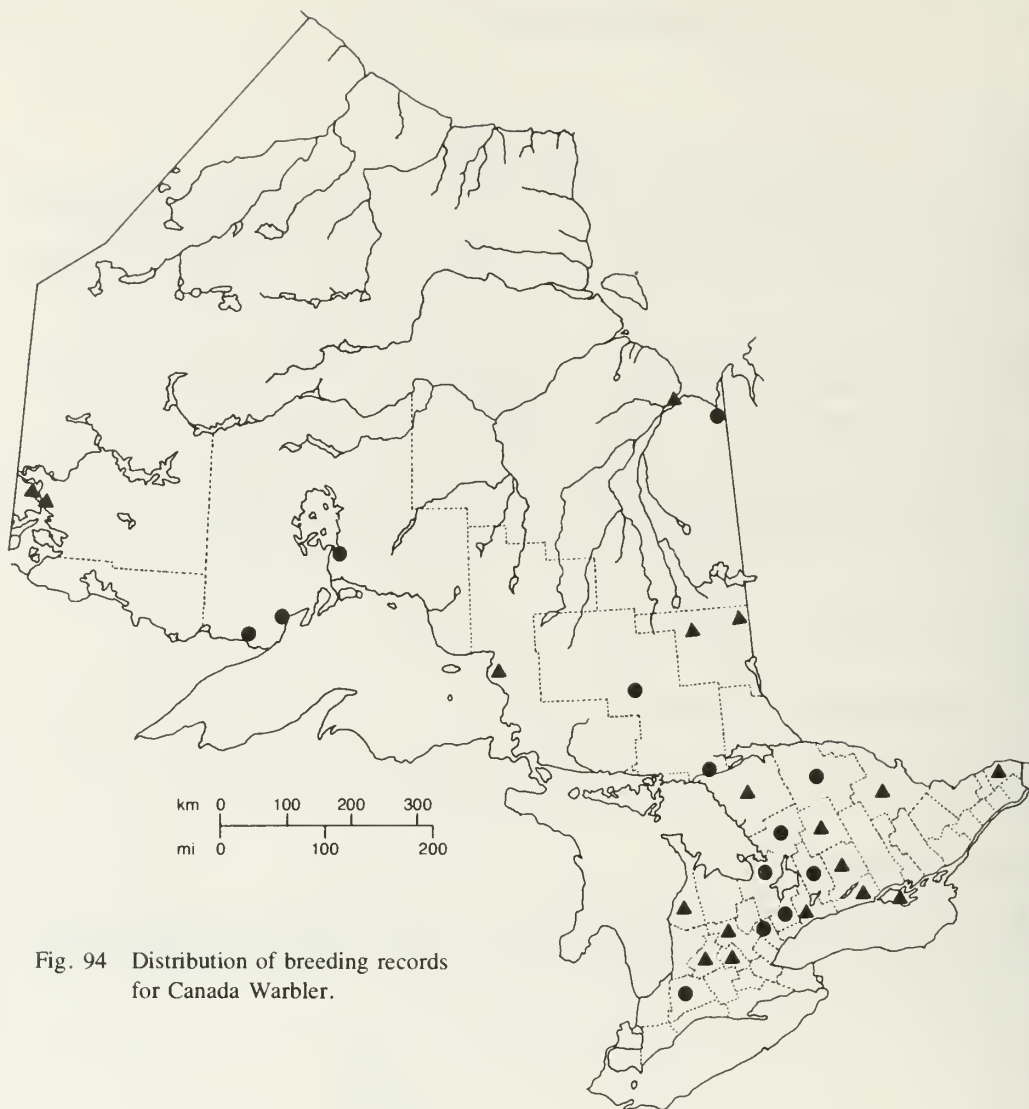


Fig. 94 Distribution of breeding records for Canada Warbler.

Canada Warbler, *Wilsonia canadensis* (Linnaeus)

Nidiology

RECORDS 29 nests representing 18 provincial regions.

Breeds in mixed (4 nests), deciduous (4 nests), coniferous (1 nest), and unspecified (4 nests) tree stands; in a swampy, open slashing (1 nest); and in a sphagnum bog (1 nest). Although some of the wooded areas were dense, most nests were in open stands, in clearings, or at woodland edges. Dry sites were only slightly favoured over swampy or wet sites. Five nests were on slopes or knolls, and an equal number were in rocky areas. A number of nests were found in areas with a heavy undergrowth of bracken fern, blueberry, poison ivy, tree clubmoss, hazel spp., alder spp., and other plants, shrubs, and sapling trees; others were in or near brush piles and deadfalls.

Nests were positioned on the ground in grass clumps (5 nests), at the base of stumps or beside fallen logs (4 nests), and in rock cavities (2 nests). Others were elevated in recessed pockets in upturned tree roots (4 nests), and in a brush pile (1 nest). An unusual location was that of a nest in a crotch of a sapling maple sp. at a height of 0.9 m (3 ft). Six elevated nests ranged in height from a few centimetres to 0.9 m (3 ft).

Nests were cups with exteriors of grasses, bark strips, leaves, plant fibres, plant down, and twigs. Nest walls had deciduous leaves woven into them. Linings of early nests (1901 and 1905) contained horse hair, and recent nests contained deer and other animal hair, along with rootlets, deciduous leaves, and fine grasses. Three nests had outside diameters of 9, 9, and 10 cm (3.5 and 4 inches), inside diameters of 5, 5, and 5 cm (2 inches), outside depths of 5.5, 5.5, and 6.5 cm (2.2 and 2.6 inches), and inside depths of 3.5, 4, and 4.5 cm (1.4, 1.6, and 1.8 inches).

EGGS 23 nests with 2 to 6 eggs; 2E (1N), 3E (4N), 4E (10N), 5E (7N), 6E (1N).

Average clutch range 4 to 5 eggs (17 nests).

Cowbird parasitism 25 nests with 5 parasitized (20%).

INCUBATION PERIOD No information.

EGG DATES 12 nests, 26 May to 28 June (14 dates); 6 nests, 9 June to 15 June.

Breeding Distribution

The Canada Warbler breeds throughout southern Ontario; however, in the predominantly agricultural areas it is very scarce. In northern Ontario it ranges at least as far north as Pickle Lake and Moosonee.

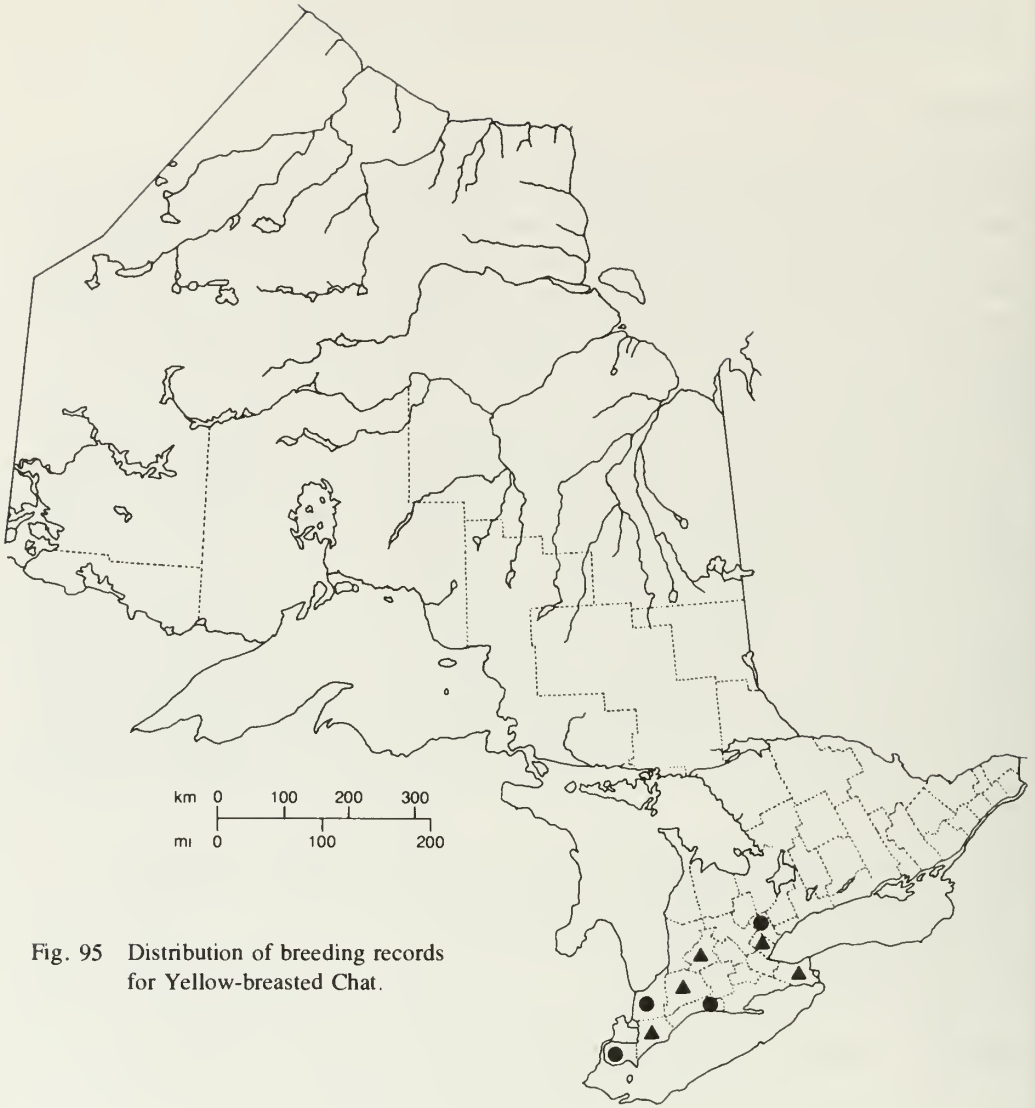


Fig. 95 Distribution of breeding records for Yellow-breasted Chat.

Yellow-breasted Chat, *Icteria virens* (Linnaeus)

Nidiology

RECORDS 17 nests representing 8 provincial regions.

Breeds in shrubby fields and pastures overgrown with dogwood spp., hawthorn spp., raspberry spp., wild rose spp., grape vine spp., and willow spp. (7 nests); and in open deciduous woods, and clearings in woods, with undergrowths of raspberry spp., grape vine spp., and other shrubs (7 nests).

Nests were positioned in shrubs and vines, and usually in dense growth. Nests were reported in raspberry spp. (5 nests), grape vine spp. (2 nests), dogwood spp. (2 nests), hawthorn sp. (1 nest), cedar (1 nest), fragrant sumac (1 nest), and unspecified bushes (3 nests). One nest was noted to be in a crotch of a bush. Heights of 15 nests ranged from 0.5 to 1.8 m (1.5 to 6 ft), with 7 averaging 0.9 to 1.2 m (3 to 4 ft).

Nests were described as bulky (1 nest), flimsy (1 nest) structures composed of grasses, bark strips, leaves, and rootlets. They were lined with grasses. Four nests had outside diameters of 11, 14, 15, and 15 cm (4.3, 5.5, and 5.9 inches); inside diameters of 5.5, 5.5, 6, and 6 cm (2.2 and 2.4 inches); outside depths of 6, 8.5, 9, and 9.5 cm (2.4, 3.3, 3.5, and 3.7 inches); and inside depths of 4, 5, 5, and 5.5 cm (1.6, 2, and 2.2 inches).

EGGS 14 nests with 1 to 5 eggs; 1E (1N), 2E (3N), 3E (2N), 4E (4N), 5E (4N).

Average clutch range 4 to 5 eggs (8 nests).

Cowbird parasitism 16 nests with 4 parasitized (25%).

INCUBATION PERIOD 1 nest, at least 11 days.

EGG DATES 13 nests, 2 June to 1 July (19 dates); 6 nests, 8 June to 15 June.

Breeding Distribution

The breeding range of the Yellow-breasted Chat is confined almost entirely to the Deciduous Forest region of extreme southern Ontario, although a few birds range northwards into immediately adjacent areas (Halton RM and Peel RM).



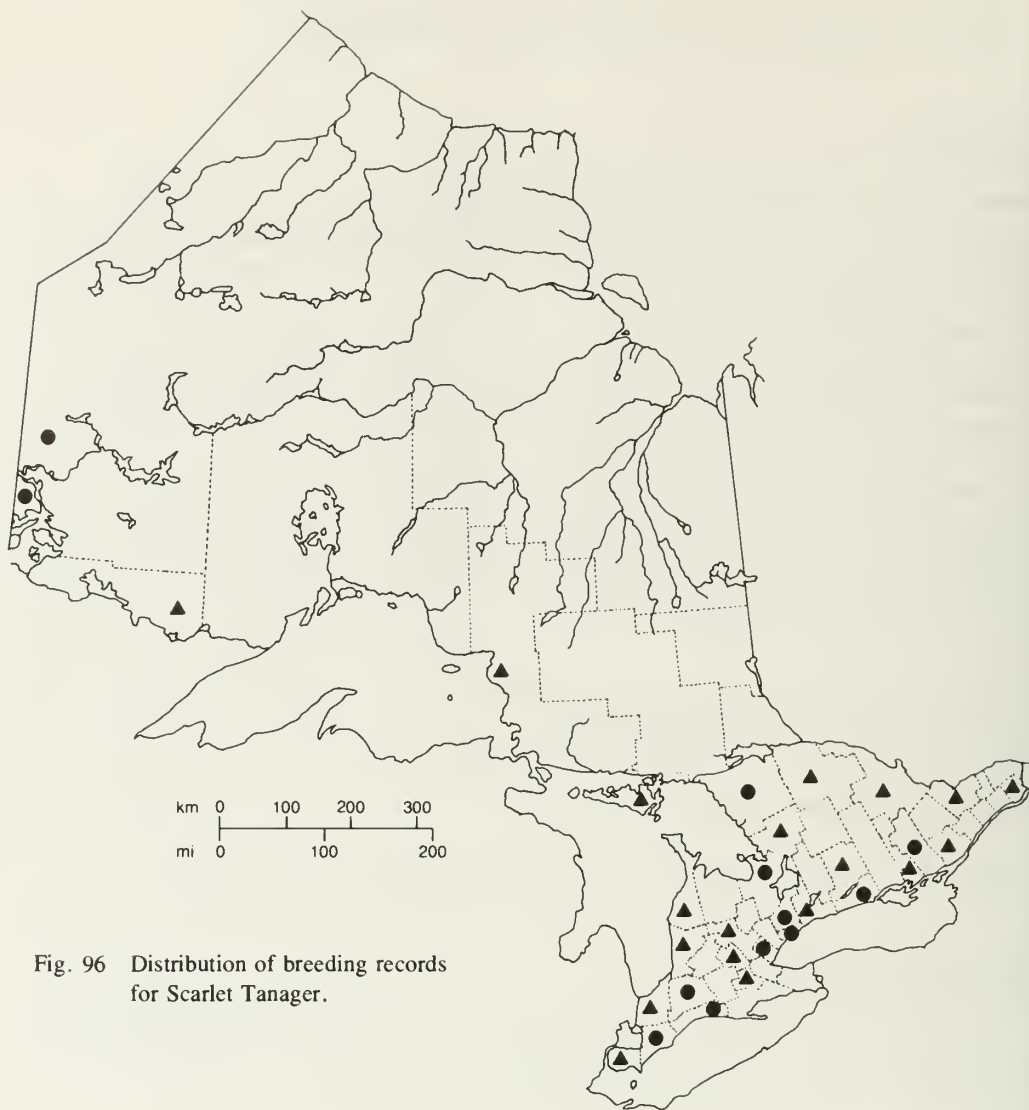


Fig. 96 Distribution of breeding records for Scarlet Tanager.

Scarlet Tanager, *Piranga olivacea* (Gmelin)

Nidiology

RECORDS 61 nests representing 26 provincial regions.

Breeds near the edges of, or within, deciduous and mixed wooded areas. Deciduous woods were preferred. Nests with nearby open areas (fields, roads, and water) and nests in closed woods were recorded in equal numbers. Two nests were reported in coniferous reforestation plots near deciduous woods, 1 nest was in a spruce/sphagnum bog, and another was in an open sedge meadow.

Nests were in trees and saplings, with deciduous trees (10 spp., 38 nests) favoured over coniferous (4 spp., 15 nests). Mature trees were selected more often than saplings. The trees chosen most often were maple spp. (12 nests), beech (8 nests), hemlock (6 nests), elm spp. (4 nests), hawthorn spp. (4 nests), and spruce spp. (4 nests). Nests were positioned almost always on horizontal limbs and were usually out from the main trunk (3 nests were at the trunk). Distances from the trunk of 16 nests ranged from 0.6 to 6 m (2 to 20 ft), with 8 averaging 1.5 to 3 m (5 to 10 ft). Nests were usually at crotches or forks of the supporting limb, or were otherwise secured by upslanting branchlets. One nest was reported in the same tree as an active nest of Cerulean Warbler. Heights of 49 nests ranged from 1.8 to 15 m (6 to 50 ft), with 25 averaging 3.7 to 9 m (12 to 30 ft).

Nests were thin, loosely built structures with shallow cups, and were often well concealed by overhanging branches and heavy foliage. Their exteriors were woven of twigs, grasses, plant stalks, bark strips and rootlets, fruit and leaf stems, pine needles, and burs. Nest linings were of grasses, rootlets, plant stalks and vegetable fibres, fruit stems, vine tendrils, and pine needles. Five nests had outside diameters ranging from 9 to 13 cm (3.5 to 5.1 inches), inside diameters from 5 to 7 cm (2 to 2.8 inches), outside depths from 5.5 to 8 cm (2.2 to 3.1 inches), and inside depths from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 30 nests with 1 to 4 eggs; 1E (3N), 2E (5N), 3E (5N), 4E (17N).

Average clutch range 4 eggs (17 nests).

Cowbird parasitism 36 nests with 7 parasitized (19.4%).

INCUBATION PERIOD No information.

EGG DATES 28 nests, 24 May to 13 July (30 dates); 14 nests, 2 June to 13 June.

Breeding Distribution

The Scarlet Tanager breeds throughout southern Ontario, but in northern Ontario it is found only locally, in areas with considerable broad-leaved forest, as far north as Lac Seul, Lake Superior, and Timiskaming District.

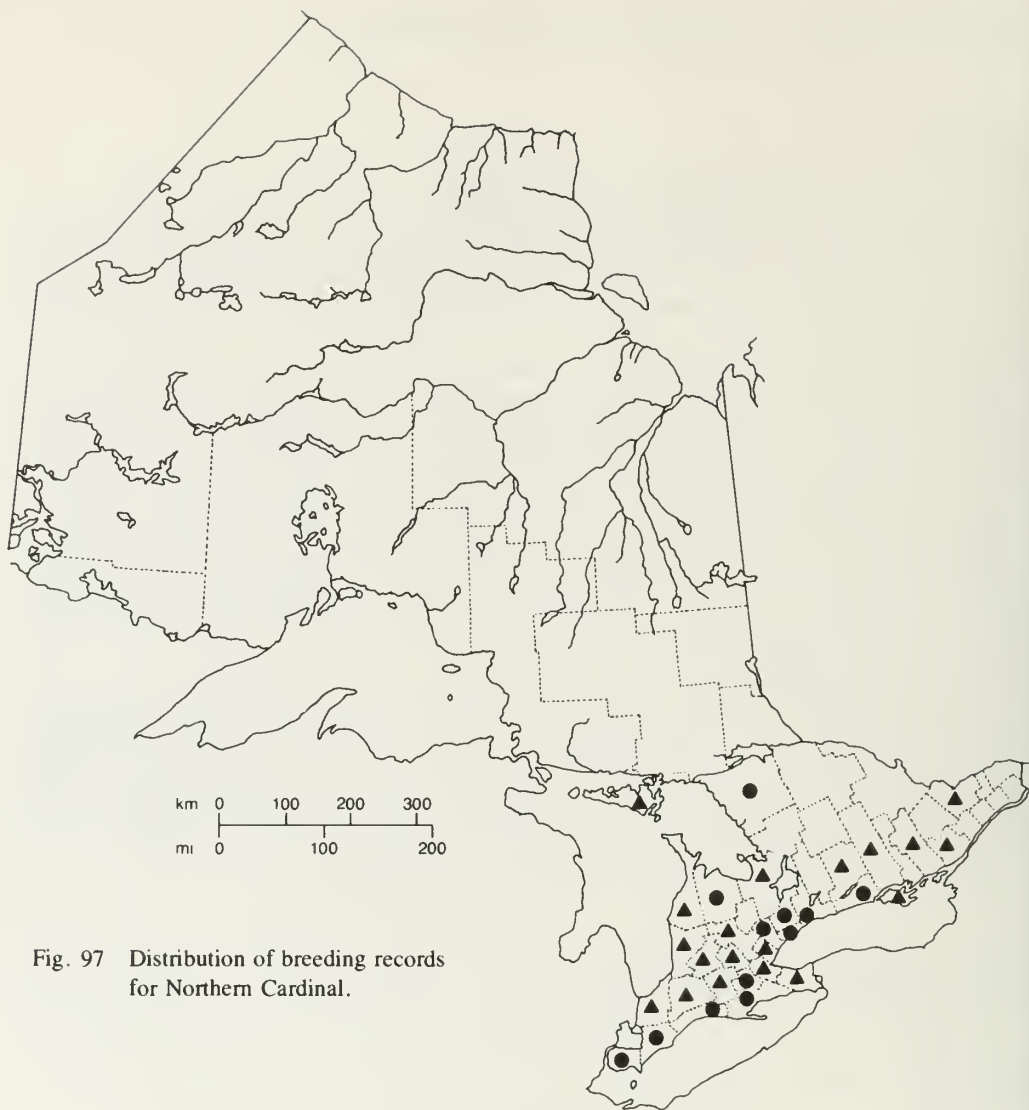


Fig. 97 Distribution of breeding records for Northern Cardinal.

Northern Cardinal, *Cardinalis cardinalis* (Linnaeus)

Nidiology

RECORDS 338 (340 nests) representing 28 provincial regions.

Breeds in urban gardens, parks, golf courses, and nurseries (117 nests); in relatively open deciduous, mixed, and coniferous woodlands, either at their edges or in clearings (108 nests); and in rural fields and pastures overgrown with hawthorns and other shrubs, in parks, in fencerows, and in orchards (75 nests). A few nests were near or in wooded swamps and marshes, and 1 nest was in a sand-dune area.

Nests, almost invariably, were placed in living deciduous trees, shrubs, and vines

(27 spp., 205 nests), and in living coniferous trees and shrubs (5 spp., 114 nests). Those selected most frequently were hawthorn spp. (57 nests), cedar spp. (55 nests), spruce spp. (41 nests), grape vine spp. (27 nests), and honeysuckle spp. (12 nests). Only 5 nests were noted in dead or dying trees and shrubs. In residential areas, hedges and small ornamental trees and shrubs were often used for nesting sites, and a number were placed very close to buildings. In other habitats, shrubby tangles and vine-covered trees and shrubs were often chosen. Unusual nest sites included 2 nests in upturned tree roots (1 over water), 1 nest on top of a fence in a bush, 1 nest in a roll of fence wire in raspberry branches, 1 nest in a climbing rose on a lattice, 1 nest in vines on a cottage wall beneath the eaves, and 1 nest inside a greenhouse in an acacia tree. Most nests were in crotches, with some on horizontal branches, and they were either against the main trunk, or more often at a distance from it. Six nests ranged from 0.6 to 1.5 m (2 to 5 ft) from the trunk. Most nests were positioned from the centre to near the top of the shrub or tree. Nesting in the same general area in successive years was reported. Heights of 311 nests ranged from 0.5 to 4.9 m (1.5 to 16 ft), with 155 averaging 1.2 to 2.1 m (4 to 7 ft).

Nests were described as bulky cups, often frail and loosely built, while some were substantial and well built. They were typically well hidden. Nest exteriors were composed of twigs into which were variously woven grasses, bark strips, plant stalks and fibres, leaves, rootlets, vine tendrils, plastic, conifer needles, paper, mud, feathers, and string. Linings were of fine grasses, fine plant stalks and fibres, rootlets, bark, hair, and pine needles. Outside diameters of 6 nests ranged from 10 to 15 cm (4 to 6 inches); inside diameters of 7 nests ranged from 7.6 to 10 cm (3 to 4 inches); outside depths of 6 nests ranged from 6.4 to 10 cm (2.5 to 4 inches); inside depths of 4 nests ranged from 4 to 6 cm (1.6 to 2.4 inches).

EGGS 256 nests with 1 to 8 eggs; 1E (19N), 2E (64N), 3E (114N), 4E (48N), 5E (9N), 6E (1N), 8E (1N).

Average clutch range 2 to 3 eggs (178 nests).

The 8-egg clutch may have been the product of 2 females. Renestings were reported on 3 occasions, and a second brood at least once. Eggs were laid at daily intervals. A single, large, malformed egg was incubated for 5 days.

Cowbird parasitism 299 nests with 63 parasitized (21.1%).

One nest contained 6 cowbird eggs and 1 egg of the host.

INCUBATION PERIOD 12 nests, 11 to 13 days: 3 of 11 days, 2 of at least 11 days, 2 of 12 days, 2 of ca 13 days, 2 of 13 days, 1 of at least 13 days.

EGG DATES 236 nests, 13 April to 15 August (303 dates); 118 nests, 14 May to 2 June. One nest held 3 young on 8 September. The protracted period of egg dates would suggest second broods, although only 1 was reported.

Breeding Distribution

The first nesting record of the Northern Cardinal in Ontario was reported in 1901 at Point Pelee. Since that time it has spread throughout southern Ontario, but is uncommon north of Muskoka DM and Kingston in Frontenac County. At this time there are only a few sight records in northern Ontario at places such as Sudbury, Thunder Bay, and western Rainy River District.

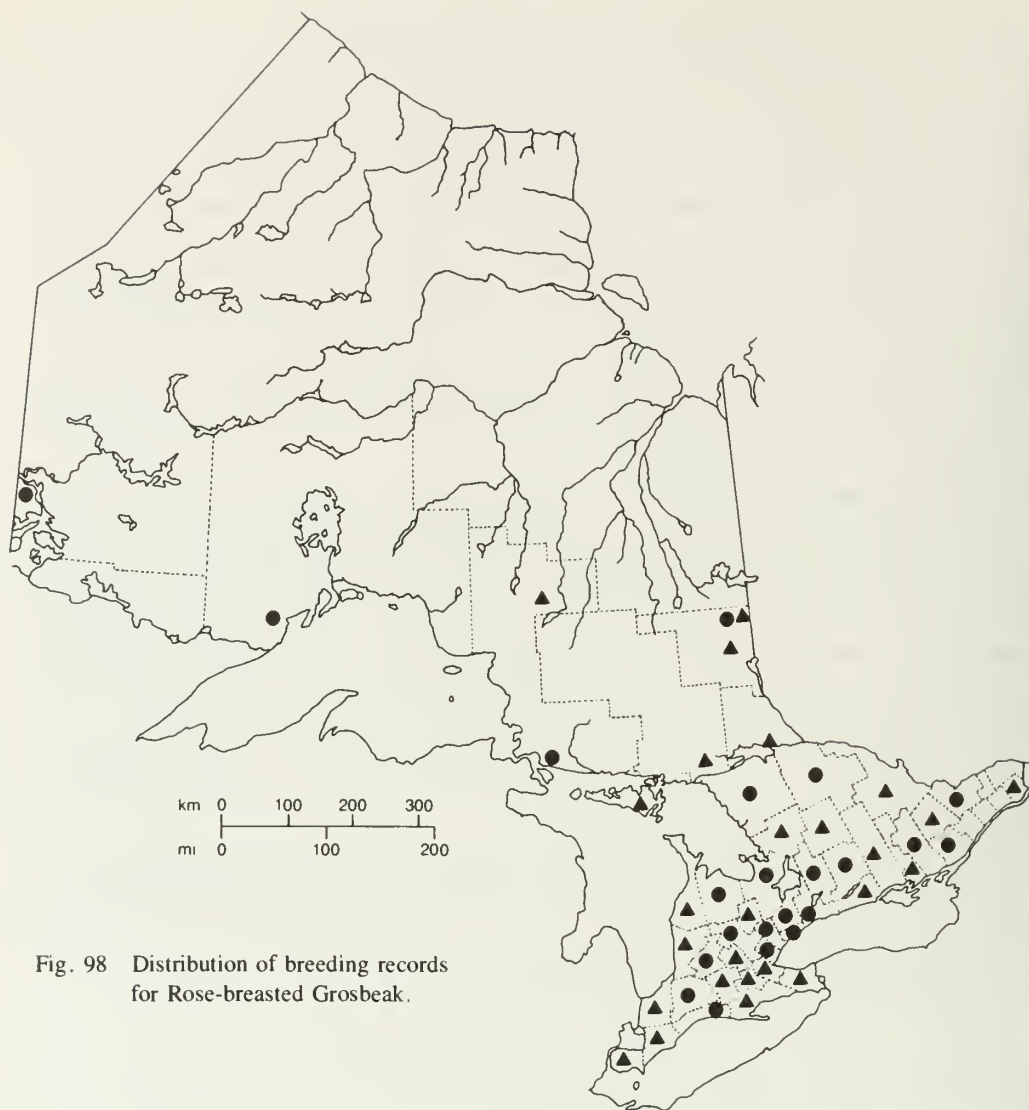


Fig. 98 Distribution of breeding records for Rose-breasted Grosbeak.

Rose-breasted Grosbeak, *Pheucticus ludovicianus* (Linnaeus)

Nidiology

RECORDS 404 (406 nests) representing 42 provincial regions.

Breeds in deciduous (101 nests), mixed (78 nests), coniferous (3 nests), and unspecified (40 nests) woodlands; in shrubby areas and overgrown fields and pastures (81 nests); in shrubby road and railway right-of-ways (8 nests); in gardens, parks, and cottage areas (8 nests); in sand-dune areas (1 nest); and on rocky outcroppings (1 nest). Woodlands were more often second growth and open than mature and dense, and many nests were at shrubby edges, and clearings, and near roads, paths, and shorelines, all of which seemed to indicate a

preference for open areas near the nest. Nests were located in wet areas (moist woods, swamps, willow swales, and bogs) as well as in dry, without evidence of favour.

Nests were elevated in a wide variety of living trees, shrubs, and vines, and small or sapling trees were more often selected than large. The DBH of 1 nest tree was 7.6 cm (3 inches). Deciduous trees, shrubs, and vines (30 spp., 310 nests) were greatly favoured over coniferous trees (6 spp., 46 nests), and the most commonly selected were hawthorn spp. (77 nests), maple spp. (74 nests), cherry spp. (21 nests), beech (21 nests), birch spp. (16 nests), and spruce spp. (13 nests). Nests were usually closer to the top of the bush or sapling than the bottom, and somewhat more often centrally located near the main trunk than away from it. Distances from the trunk of 10 nests ranged from 0.2 to 6 m (0.7 to 20 ft), with 5 averaging 1.2 to 2.4 m (4 to 8 ft). A few nests were reported to be not well hidden. They were more often placed in upright crotches (92 nests) than on horizontal limbs at forks (50 nests). One nest was in the same tree as an active nest of Northern Oriole and 12 m (40 ft) distant from another grosbeak nest. A second nest was within 3 m (10 ft) of a nest of Gray Catbird. Heights of 357 nests ranged from 0.8 to 16.8 m (2.5 to 55 ft), with 179 averaging 1.8 to 3.7 m (6 to 12 ft).

The quality of nest construction was variable, but most nests were described as loose and flimsily built cups with shallow bowls. The contents of a number of nests could be seen through their bottoms. Nest exteriors were usually composed of twigs, and less often of plant stalks and fibres, coarse grasses, pine needles, bark strips, vine tendrils, and flower heads. Linings were characteristically formed of fine grasses and rootlets, and sometimes fine twigs, fine plant stalks and fibres, pine needles, leaf and fruit stems, leaves, bark shreds, and feathers were used. Five nests were reported to be without linings. Seven nests had outside diameters ranging from 9 to 17 cm (3.5 to 6.7 inches), inside diameters from 7 to 8.5 cm (2.8 to 3.3 inches), outside depths from 4 to 11.5 cm (1.6 to 4.5 inches), and inside depths from 3 to 5.5 cm (1.2 to 2.2 inches).

EGGS 226 nests with 1 to 5 eggs; 1E (14N), 2E (26N), 3E (80N), 4E (92N), 5E (14N).

Average clutch range 3 to 4 eggs (172 nests).

Cowbird parasitism 275 nests with 18 parasitized (7.5%).

INCUBATION PERIOD 8 nests, 11 to 14 days: 2 of 11 days, 1 of no more than 11 days, 1 of at least 11 days, 1 of no more than 12 days, 2 of at least 12 days, 1 of at least 14 days.

EGG DATES 202 nests, 10 May to 16 July (250 dates); 101 nests, 1 June to 10 June. Although double broods were reported, by far the greatest number of egg dates occurred between the last week of May and the first 2 weeks of June, indicating that 1 brood is customary.

Breeding Distribution

The Rose-breasted Grosbeak breeds throughout southern Ontario and across northern Ontario as far north as the towns of Kenora and Cochrane. It probably breeds somewhat farther north, particularly in the west, since there are summer sightings from Pickle Lake, in Kenora District.

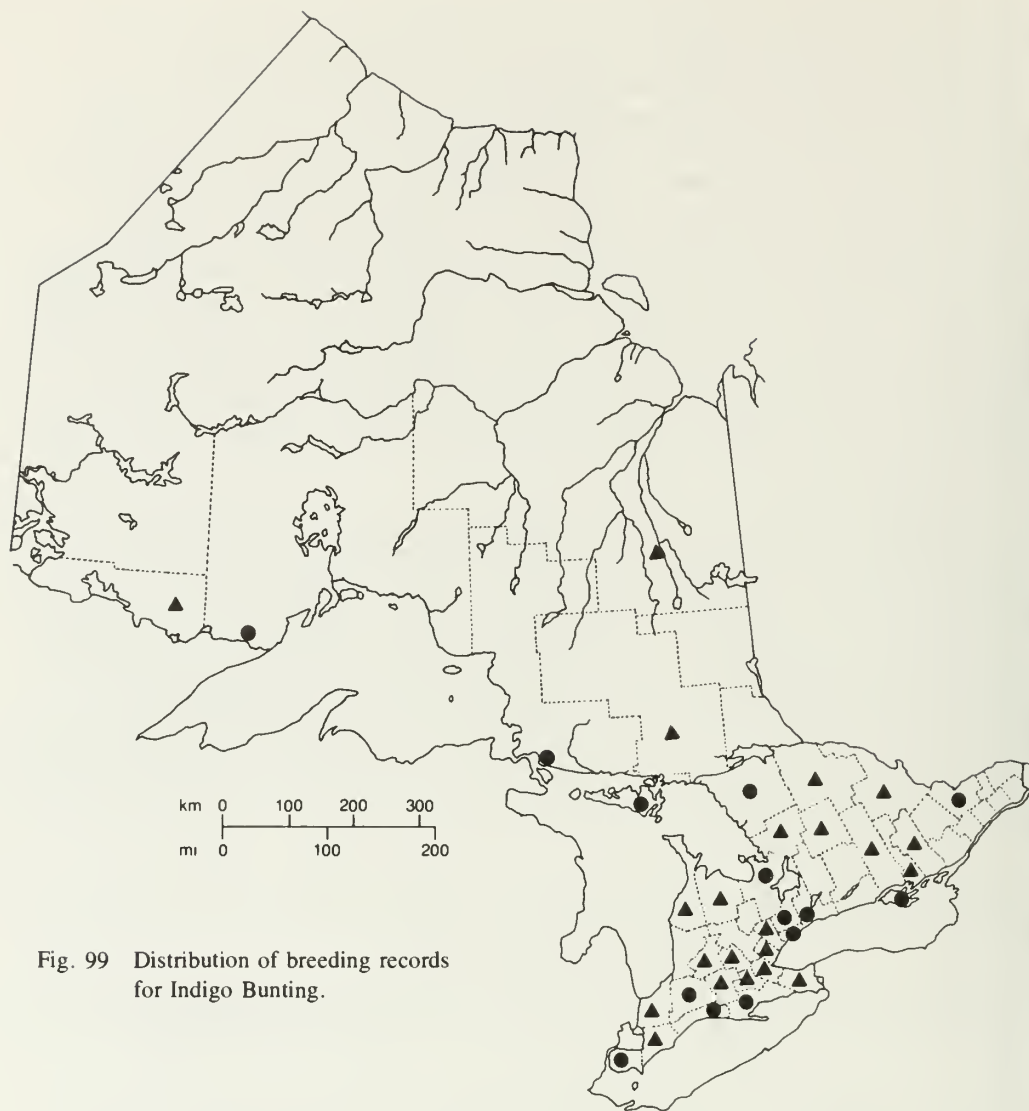


Fig. 99 Distribution of breeding records for Indigo Bunting.

Indigo Bunting, *Passerina cyanea* (Linnaeus)

Nidiology

RECORDS 181 nests representing 35 provincial regions.

Breeds in open woodlands, or in wooded areas at clearings, edges, roads, paths, and shorelines (49 nests); in cleared areas they breed in shrubby fields and pastures, in fencerows, in savannahs, and in orchards (26 nests); on road and railway right-of-ways (14 nests); in residential gardens (3 nests); and in a cottage area in a provincial park (1 nest). Deciduous tree stands (21 nests) were preferred to mixed (12 nests) and coniferous (2 nests). Only 3 nests were reported in relatively closed woods. Almost all nest sites had heavy undergrowths of saplings and/or dense growths of shrubs, plants, and vines (Fig. 177).

Nests were invariably elevated in shrubs, trees (usually saplings), plants, and vines. Deciduous shrubs, trees, and vines (27 spp., 141 nests) were greatly preferred over coniferous trees and shrubs (4 spp., 4 nests), and 11 nests were reported in 6 species of non-woody plants. Among the most frequently selected species, raspberry and other *Rubus* spp. (65 nests) dominated over maple spp. (12 nests), hazel spp. (8 nests), hawthorn spp. (7 nests), dogwood spp. (5 nests), elm spp. (5 nests), and apple (4 nests). Six nests were reported in various fern spp.

Most nests were placed in upright forks, with a lesser number supported between vertical stalks and canes of plants and brambles. Three nests were at the ends of branches, saddled on a bough, and woven around a sapling trunk, respectively. Many nests, and especially those in raspberry, were located near the top of the shrub, just below the topmost leaves, and were well hidden. One nest was reported within 9 m (30 ft) of another nest of this species. Heights of 147 nests ranged from 0.2 to 6 m (0.5 to 20 ft), with 74 averaging 0.6 to 1 m (2 to 3.3 ft).

Nests (Fig. 178B) were well-made woven cups with rather straggly exteriors and neatly formed nest cavities. Exteriors were characteristically composed of leaves and coarse grasses, and less often of plant stalks and fibres, bark strips, plant down, rootlets, paper, string, and spider webs. Linings were of fine grasses into which hairs were often thinly woven. Other lining materials were fine plant stalks, plant down, pine needles, rootlets, feathers, small twigs, birch bark strips, and leaves. Ten nests had outside diameters ranging from 7.5 to 10 cm (3 to 4 inches), inside diameters from 4 to 7 cm (1.6 to 2.8 inches), outside depths from 5 to 9 cm (2 to 3.5 inches), and inside depths from 3 to 6 cm (1.2 to 2.4 inches).

EGGS 126 nests with 1 to 6 eggs; 1E (4N), 2E (11N), 3E (65N), 4E (45N), 6E (1N).

Average clutch range 3 eggs (65 nests).

Cowbird parasitism 165 nests with 40 parasitized (24.2%).

INCUBATION PERIOD 2 nests: 1 of 12 days, 1 of ca 12 days.

EGG DATES 114 nests, 26 May to 15 August (128 dates); 57 nests, 11 June to 30 June.

One nest contained 3 young on 26 September, indicating a much later egg date than recorded above. The extended period of egg dates strongly suggests double broods, although none were reported.

Breeding Distribution

The Indigo Bunting nests throughout southern Ontario. In the northern part of the province it is more locally distributed as far north as Kenora, Thunder Bay, Lake Superior Provincial Park, and Cochrane.

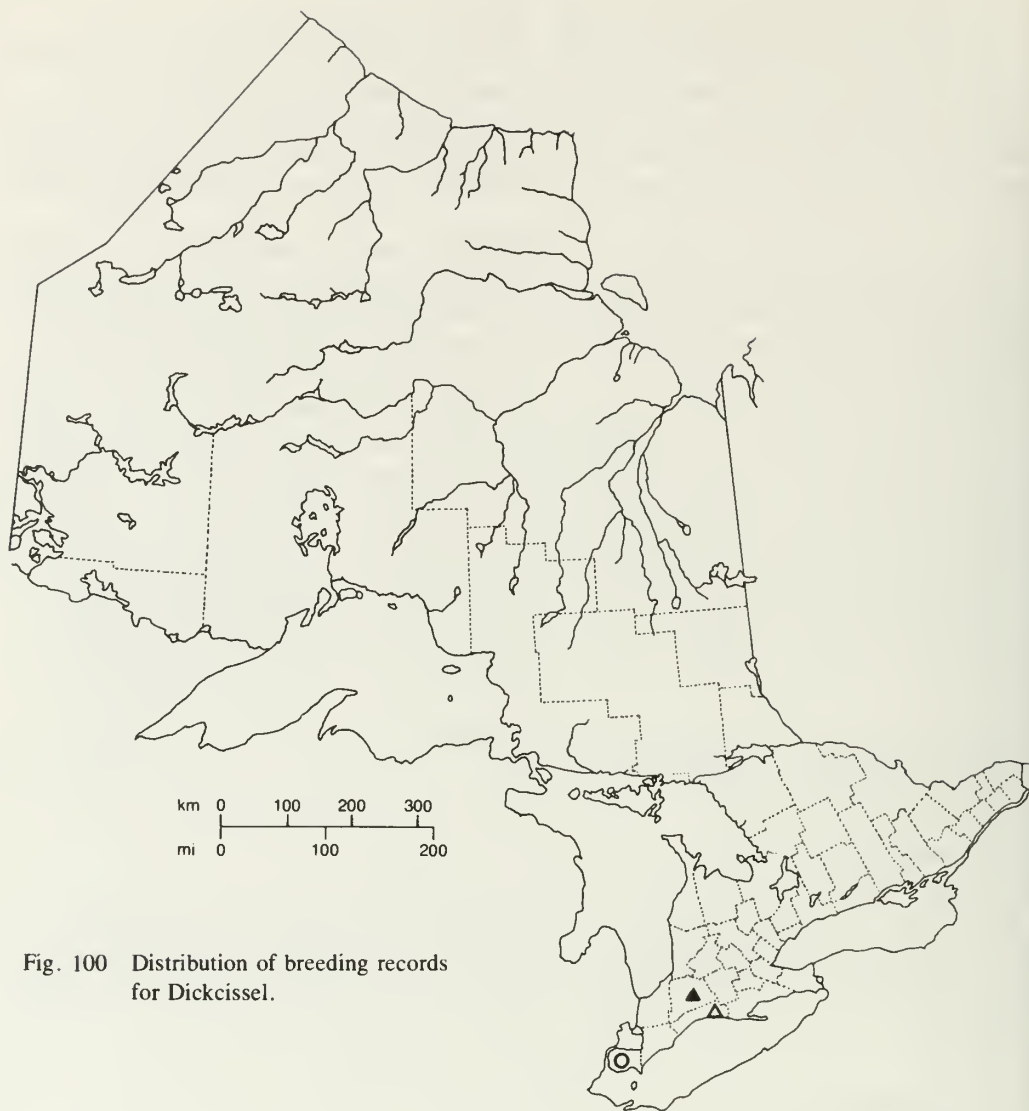


Fig. 100 Distribution of breeding records for Dickcissel.

Dickcissel, *Spiza americana* (Gmelin)

Nidiology

RECORDS 4 nests representing 3 provincial regions.

Only 4 nests of this species have been reported in Ontario, 3 of them historical records from Essex (1884), Elgin (1885), and Middlesex (1895) counties, and a more recent record also from Middlesex County (1972).

One nest was well concealed on the ground in a sloping timothy field; another was in a shrubby farm field, elevated in a small hawthorn at a height of 0.3 m (1 ft), and was formed of grasses and twigs; a third nest was on the ground at the base of a weed.

No collected nests were available for examination or measurements.

EGGS 3 nests with 4, 5, and 5 eggs.

A fourth nest held 4 young on 7 July.

INCUBATION PERIOD No information.

EGG DATES 2 nests, 6 June and 21 June.

Breeding Distribution

A more southern species which is at the northern edge of its range in Ontario, the Dickcissel apparently nests only very sporadically in southern agricultural Ontario.



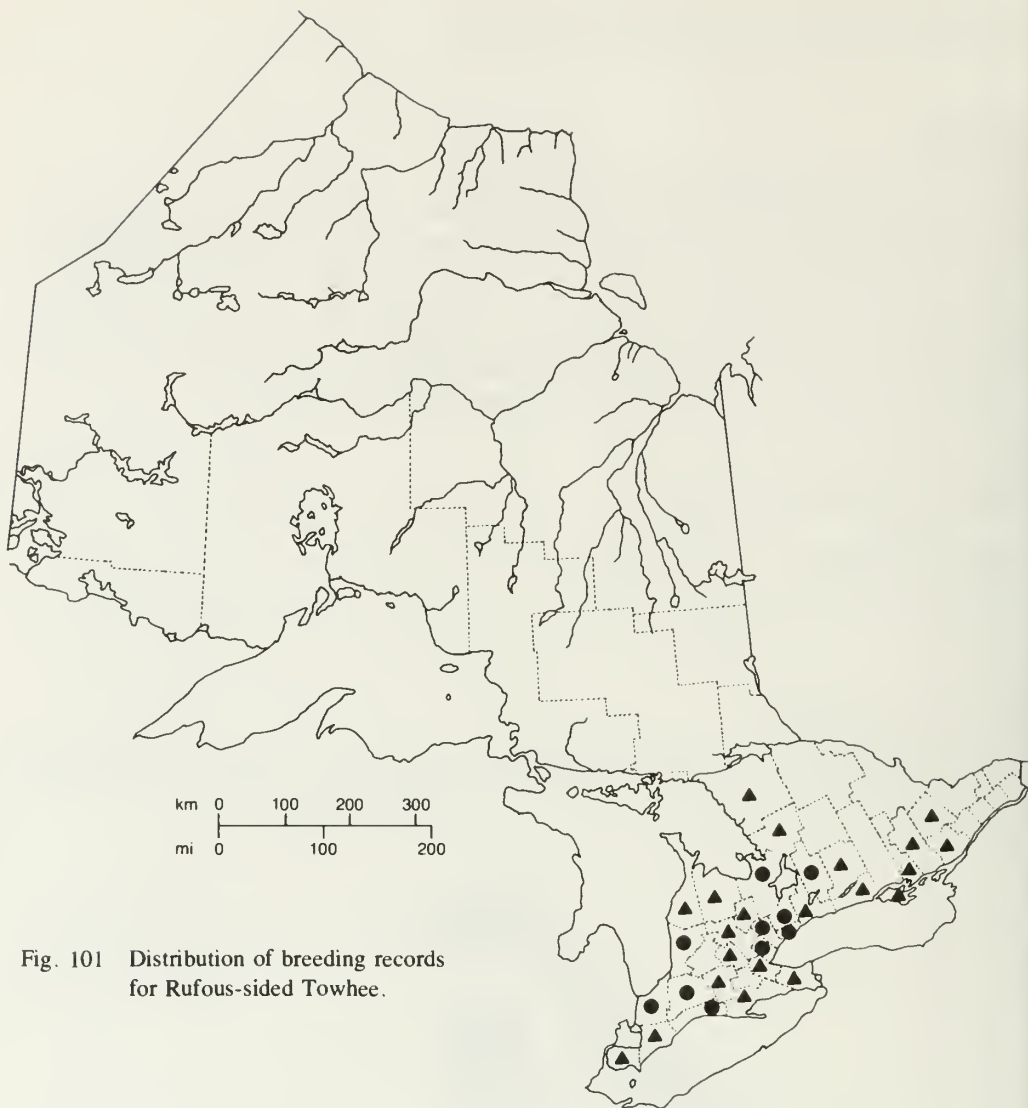


Fig. 101 Distribution of breeding records for Rufous-sided Towhee.

Rufous-sided Towhee, *Pipilo erythrophthalmus* (Linnaeus)

Nidiology

RECORDS 125 nests representing 29 provincial regions.

Breeds in mixed, deciduous, and coniferous woodlands (66 nests); in overgrown fields (15 nests); in vines and shrubby tangles (3 nests); on overgrown rocky outcroppings (2 nests); and on pipeline slashings (1 nest). Where specified, the wooded areas were open and many nests were near woodland edges or clearings (Fig. 177). Still other nests were near roads or water, indicating the preference of the species for open areas near the nest. Most nest sites were dry and the ground cover was usually dense.

Most nests were on the ground (84 nests), but some were elevated in bushes, trees, vines, and saplings, and in brush piles (22 nests).

Ground nests were often under or at the base of trees, bushes, or saplings (38 nests); some were under fallen branches (4 nests); 1 nest was under a log. Other ground nests were placed amid plant stalks and leaf litter (7 nests); in tufts of grass (5 nests); amid dead limbs and tall grasses (4 nests); in grape-vine tangles (2 nests); in a patch of brush (1 nest); and on a moss base (1 nest). Ground nests were often well hidden, and 9 nests were reported to be in depressions in the ground, some with their rims at ground level.

Elevated nests were in both coniferous shrubs and trees (4 spp., 11 nests), and deciduous shrubs, trees, and vines (4 spp., 8 nests). Juniper spp. (7 nests) and hawthorn spp. (6 nests) were the 2 most frequently selected species. Heights of 22 elevated nests ranged from 0.5 to 2.4 m (1.5 to 8 ft), with 11 averaging 0.6 to 1.2 m (2 to 4 ft).

Nest structures were variable, but were often bulky cups with relatively shallow bowls. Some were described as roughly built and others as neatly built. Three nests were arched or domed by grasses. Nest exteriors were of grasses, leaves, plant stalks, bark strips, twigs, rootlets, pine needles, lichens, and mosses. Linings were characteristically of fine grasses, and other lining materials were pine needles, rootlets, fine herbaceous stalks, and hair. One nest had no lining. Outside diameters of 5 nests ranged from 9.5 to 17 cm (3.7 to 6.75 inches); inside diameters of 5 nests ranged from 7.3 to 9 cm (2.9 to 3.5 inches); outside depth of 1 nest was 14 cm (5.5 inches); inside depths of 3 nests ranged from 4.8 to 6.4 cm (1.9 to 2.5 inches).

EGGS 76 nests with 1 to 6 eggs; 1E (3N), 2E (7N), 3E (21N), 4E (35N), 5E (6N), 6E (4N).

Average clutch range 3 to 4 eggs (56 nests).

Cowbird parasitism 122 nests with 23 parasitized (18.9%).

INCUBATION PERIOD 4 nests: 2 of at least 11 days, 1 of at least 12 days, 1 of at least 13 days.

EGG DATES 101 nests, 6 May to 13 August (115 dates); 51 nests, 27 May to 18 June.

The protracted period of egg dates suggests at least 2 broods, although none were specifically reported.

Breeding Distribution

The Rufous-sided Towhee breeds throughout southern Ontario, but on the Canadian Shield it is very thinly scattered and absent from large areas. In northern Ontario only a small number of birds summer as far north as Sault Ste Marie and Sudbury.

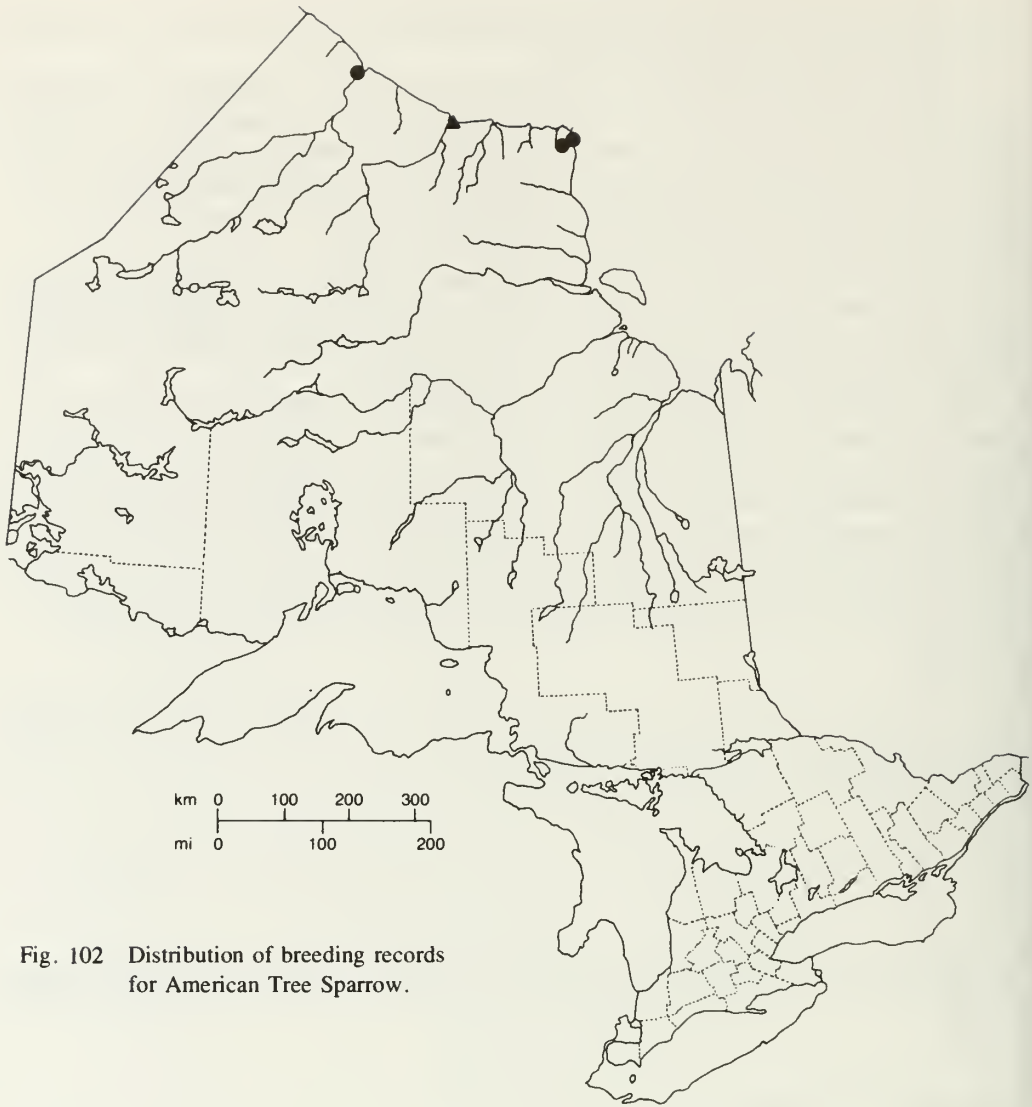


Fig. 102 Distribution of breeding records for American Tree Sparrow.

American Tree Sparrow, *Spizella arborea* (Wilson)

Nidiology

RECORDS 8 nests representing 1 provincial region.

A nesting species of treeline and tundra (Figs. 147 and 149), only 8 nests of the American Tree Sparrow have been discovered in Ontario. Three of these were at the mouth of the Severn River, near the coast and at treeline; 2 were on the southeast shore of the Winisk River, 1.6 km (1 mi) from the coast, on peat tundra; 3 were at the abandoned radar sites 415 and 416 near Cape Henrietta Maria, on tundra.

All 8 nests were on the ground: 2 at the bases of small black spruce; 4 at the bases of small deciduous shrubs (2 were arctic willow); 1 in grasses near willows; and 1 under a piece of partially buried scrap metal.

Nests were well-hidden, sunken cups whose exteriors were of coarse grasses, twigs, plant stalks, mosses, and leaves. Linings were characteristically of feathers (Willow Ptarmigan and duck spp.) and fine grasses. The outside diameter of 1 nest was 13 cm (5.1 inches); inside diameters of 2 nests were 5.5 and 6.5 cm (2.2 and 2.6 inches); outside depth of 1 nest was 7 cm (2.8 inches); inside depths of 2 nests were 4 and 5 cm (1.6 and 2 inches).

EGGS 5 nests with 1 to 6 eggs; 1E (1N), 4E (1N), 5E (1N), 6E (2N).

Three other nests each contained 5 young.

INCUBATION PERIOD No information.

EGG DATES 5 nests, 21 June to 9 July (6 dates); 3 nests, 26 June to 1 July.

Breeding Distribution

The first 2 nests of the American Tree Sparrow reported in Ontario were not located until 1940 (Baillie, 1961), and only 6 subsequent nests have been found. It breeds at or above treeline all along the Hudson Bay coast. Although Manning (1952) noted these birds along most of the James Bay coast in early summer, there is no evidence that it nests farther south than the approximate limit of trees reaching the coast near Lake River.



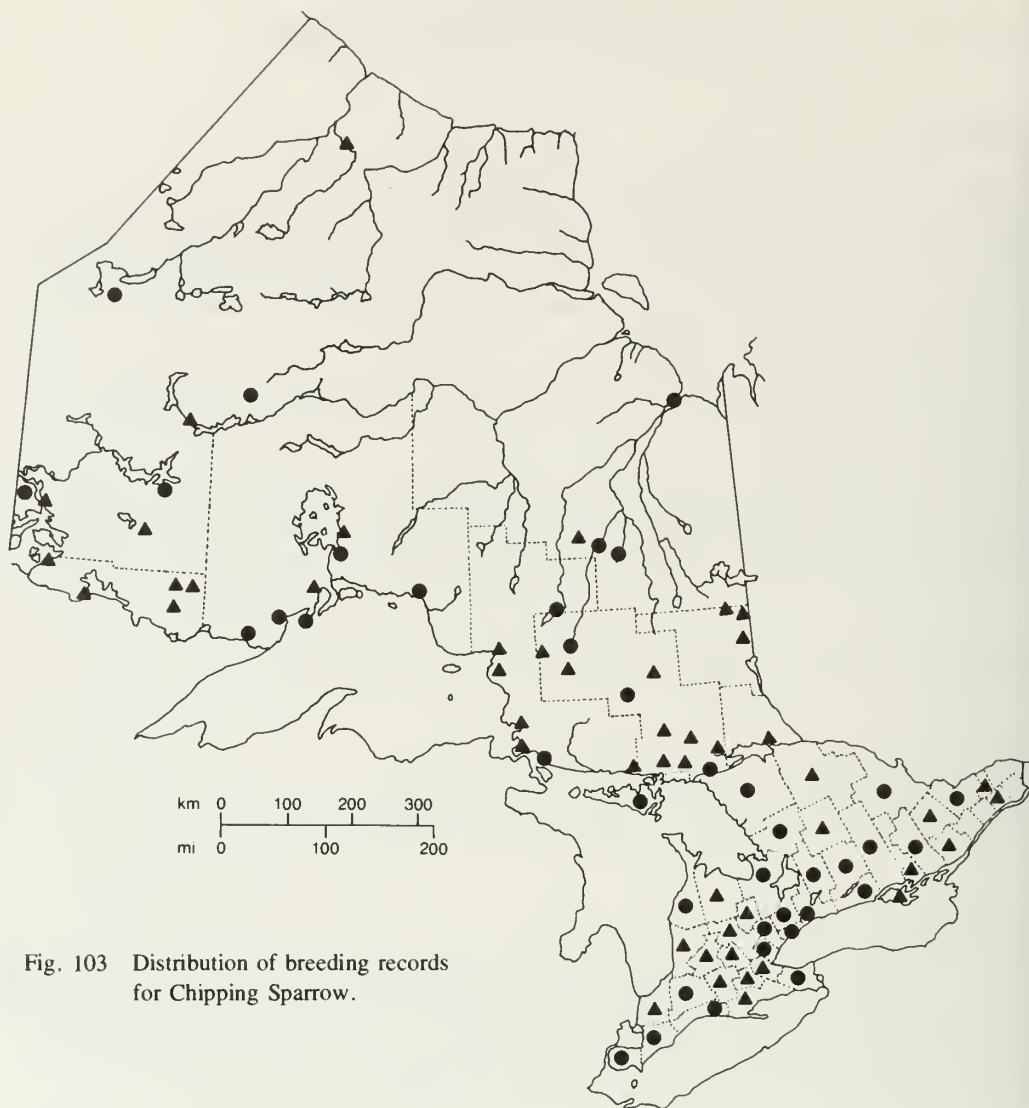


Fig. 103 Distribution of breeding records for Chipping Sparrow.

Chipping Sparrow, *Spizella passerina* (Bechstein)

Nidiology

RECORDS 1597 (1600 nests) representing 48 provincial regions.

Breeds in residential gardens and farmyards (209 nests); in wooded areas, including coniferous stands and reforestation plantations (48 nests), and mixed (16 nests) and deciduous stands (8 nests); in overgrown fields and pastures and in orchards, vineyards, and nurseries (39 nests); in parks, campgrounds, and cottage areas (27 nests); in other rural and urban populated areas, including schoolyards, cemeteries, golf courses, tennis courts, parking lots, and gravel yards (11 nests); on road and railway right-of-ways (10 nests); in treed sand-dune areas (6 nests); and in treed bogs (2 nests). Habitats were usually dry and almost invariably

contained trees and shrubs. Wooded areas were usually open or nests were at woodland edges.

With very few exceptions, nests were elevated in living trees, shrubs, and vines.

Coniferous trees and shrubs (8 spp., 292 nests) were preferred to deciduous trees, shrubs, and vines (29 spp., 140 nests), and the types most frequently selected were spruce spp. (90 nests), pine spp. (80 nests); juniper spp. (48 nests), white cedar (37 nests), hawthorn spp. (30 nests), fir spp. (15 nests), and elm spp. (12 nests). Many garden nests were in hedges, and nests in vines and roses were often on trellises or against walls. A nest was reported in each of the following locations: among branches of a fallen pine; on a willow stub; on an apple stump; on the ground in red clover; in a goldenrod clump; in an implement shed, in a notch on the side of an upright timber; and in a corner of a barnyard rail fence. Tree and shrub nests were on lateral branches or in crotches and were more often away from the trunk than near it.

Distances from the trunk of 29 nests ranged from 0.5 to 4.6 m (1.5 to 15 ft), with 15 averaging 0.9 to 2.4 m (3 to 8 ft). One nest was fastened to 4 adjacent branches. Three reports each described a nest of this species in the same tree as an active robin nest, a fourth was in the same tree as a nest of Cedar Waxwing, and a fifth in the same tree as a nest of Mourning Dove. Heights of 412 nests ranged from 0.2 to 15 m (0.5 to 50 ft), with 206 averaging 0.9 to 2.2 m (3 to 7.25 ft).

Nests were often described as cups, which were sometimes of loose or flimsy exterior construction, but usually had neatly woven bowls. Exteriors were formed of grasses, to which were sometimes added plant stalks, rootlets, fine twigs, string, and conifer needles. Exteriors of 33 nests were of grass only, 7 of plant stalks only, and 2 of rootlets only, and 1 nest was entirely composed of twigs of mock orange. Linings were characteristically of hair strands (most often horse), and less often of rootlets, fine grasses, conifer needles, plant stalks, plant down, leaf veins, tinsel, and rabbit fur. Eleven nests had outside diameters ranging from 6 to 11.2 cm (2.4 to 4.4 inches), inside diameters from 3.8 to 6 cm (1.5 to 2.4 inches), outside depths from 4.5 to 9 cm (1.8 to 3.5 inches), and inside depths from 2.5 to 3.7 cm (1 to 1.5 inches).

EGGS 380 nests with 1 to 7 eggs; 1E (13N), 2E (31N), 3E (96N), 4E (216N), 5E (23N), 7E (1N).

Average clutch range 4 eggs (216 nests).

Eggs were usually laid at daily intervals, but an interval of 2 days between the second and third eggs was reported for 1 nest. At least 5 of the 2-egg clutches were incubated and produced young. Clutch sizes of late-season nestings averaged smaller.

Cowbird parasitism 1412 nests with 451 parasitized (32%).

In Wellington County, in 1984, 13 of 31 nests were parasitized (42%).

INCUBATION PERIOD 34 nests, 7 to 14 days, with 17 averaging 10 to 11 days: 1 of 7 days, 1 of 8 days, 5 of 9 days, 1 of ca 9 days, 11 of 10 days, 1 of no more than 10 days, 2 of ca 10 days, 3 of at least 10 days, 5 of 11 days, 1 of 12 days, 1 of no more than 12 days, 1 of at least 12 days, 1 of 14 days.

Since hatching periods were often longer than 24 hours, it is likely that the shortest incubation periods indicated that incubation, at least sometimes, commenced before the clutch was complete.

EGG DATES 455 nests, 1 May to 14 August (625 dates); 227 nests, 4 June to 20 June.

Egg dates for 1 May and 2 May were for nests from Wentworth and Middlesex counties, respectively. Renestings and second broods were reported, usually, but not always, in different nests. One pair produced 3 broods, each in a different nest.

Breeding Distribution

The Chipping Sparrow breeds throughout southern Ontario and across northern Ontario as far north as Moosonee, and to within ca 100 km (60 mi) of Fort Severn.

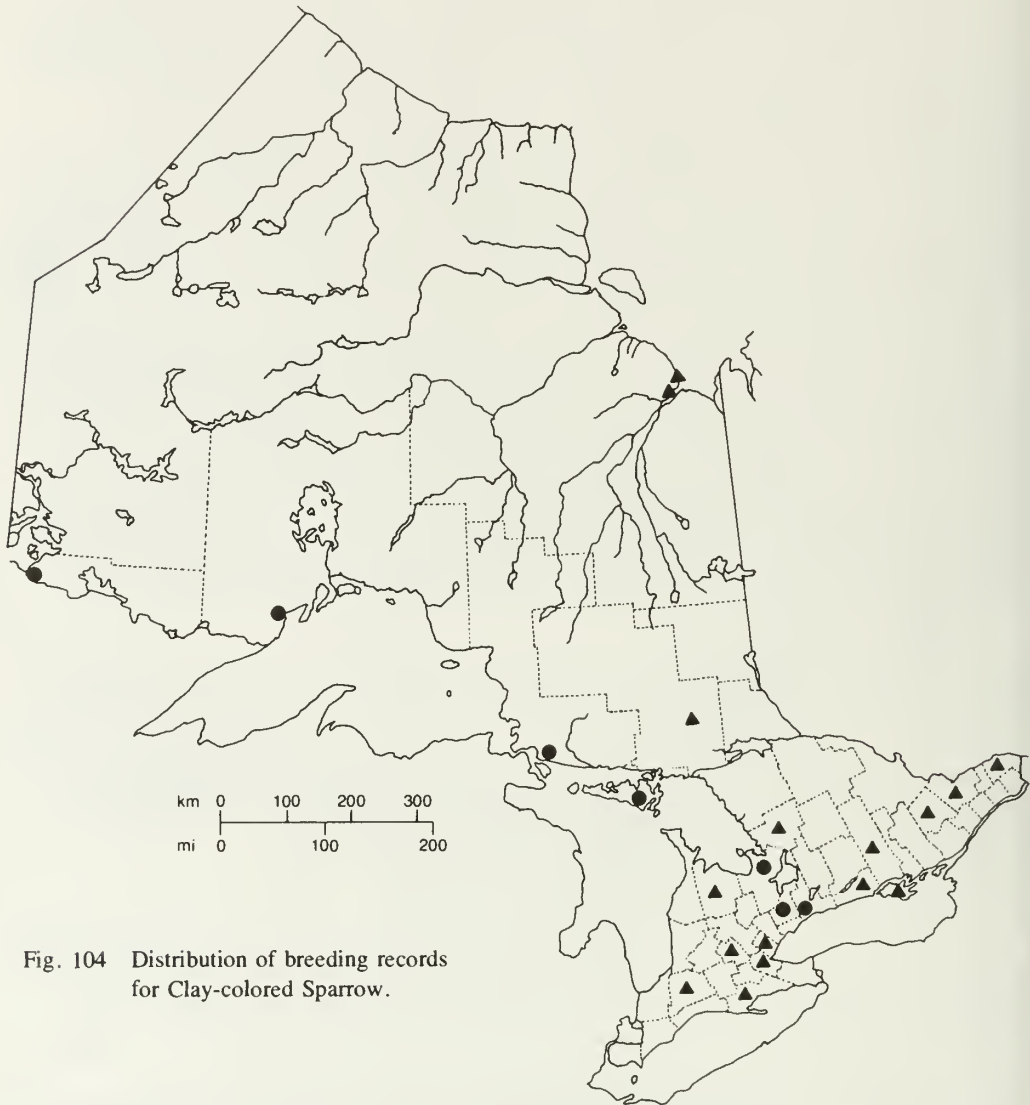


Fig. 104 Distribution of breeding records for Clay-colored Sparrow.

Clay-colored Sparrow, *Spizella pallida* (Swainson)

Nidiology

RECORDS 36 nests representing 18 provincial regions.

Breeds in Christmas tree and other conifer plantations in grassy fields (19 nests; Fig. 181); in shrubby, overgrown fields and pastures (7 nests); in a cottage area (1 nest); in a dried-up muskeg burn with some tree regeneration (1 nest); and in a grass/sedge opening in willow scrub near a salt marsh (1 nest).

Nests were usually elevated in living trees and shrubs (21 nests), and occasionally were placed on or near the ground (5 nests). Small coniferous trees (4 spp., 14 nests) were preferred to deciduous saplings and shrubs (5 spp., 6 nests). Those species most frequently selected were pine spp. (8 nests), spruce spp. (2 nests), and raspberry spp. (2 nests). Nests were well hidden and were usually placed near or against the trunk in crotches. They were sometimes situated at such a low level that grass stalks helped support them among the lowest branches of the small nest trees. Heights of 21 nests ranged from 0.1 to 1.8 m (0.3 to 6 ft), with 11 averaging 0.2 to 1 m (0.5 to 3.25 ft). Ground nests were in grass and weed clumps, often near the base of small trees, and 1 was described as well concealed in an overhanging clump of dead grass and vetch.

Nests (Fig. 182B) were neat cups (1 was noted to be loose) that were bulkier than those of Chipping Sparrow. Exteriors were of coarse grasses (twigs and plant stalks were noted in 2 nests), and linings were characteristically of fine grasses with occasional inclusions of horse hair, rootlets, pine needles, and plant fibres. Five nests had outside diameters ranging from 7.5 to 9.5 cm (3 to 3.7 inches), inside diameters from 4.5 to 5.2 cm (1.8 to 2 inches), outside depths from 4 to 5.5 cm (1.6 to 2.2 inches), and inside depths from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 23 nests with 2 to 5 eggs; **2E** (2N), **3E** (4N), **4E** (16N), **5E** (1N).

Average clutch range 4 eggs (16 nests).

Cowbird parasitism 29 nests with 11 parasitized (37.9%).

INCUBATION PERIOD 3 nests, each at least 11 days.

Periods were estimated with the assumption that incubation commenced with the laying of the third egg (Salt, 1966).

EGG DATES 20 nests, 29 May to 20 July (28 dates); 10 nests, 10 June to 21 June.

Breeding Distribution

The Clay-colored Sparrow (Fig. 182A) is a relatively recent arrival in most of Ontario. It is a western species which probably expanded into the western part of the province only in this century (Snyder, 1938). It was not known to breed east of Lake Nipigon until 1931 (Snyder, 1942) or in southern Ontario until 1950. Today it is found commonly in western Rainy River District and at widely scattered localities from Kenora to Thunder Bay, Sault Ste Marie to Sudbury, and throughout southern Ontario. It has also recently been found at several widely scattered locations farther north, to the shores of Hudson and James bays (Fort Severn, Moosonee, and North Point); an undocumented breeding has been reported from Moosonee in 1984.

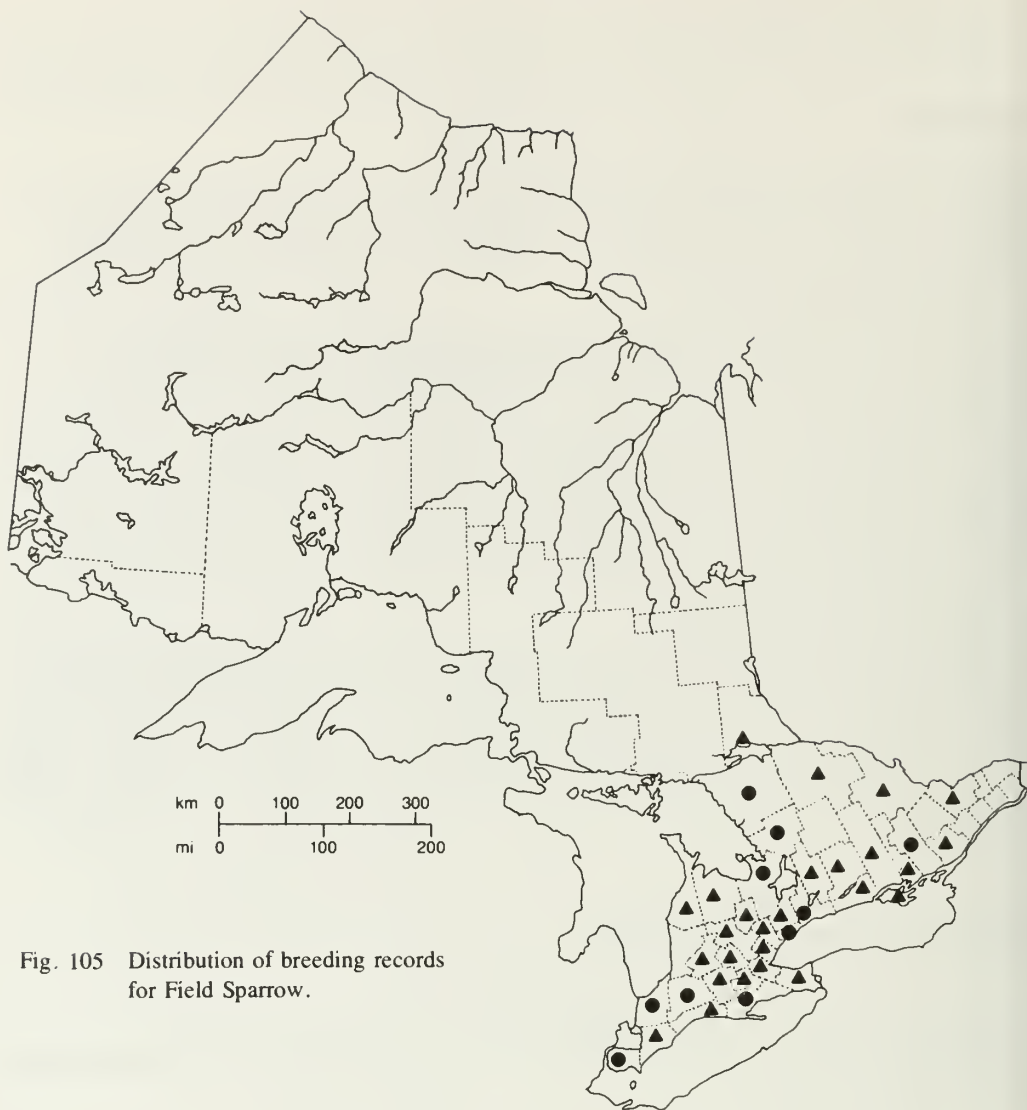


Fig. 105 Distribution of breeding records for Field Sparrow.

Field Sparrow, *Spizella pusilla* (Wilson)

Nidiology

RECORDS 345 nests representing 34 provincial regions.

Breeds in fields and pastures, both overgrown (108 nests; Fig. 179) and open (42 nests); in Christmas tree and other small, open conifer plantations (42 nests); in both open and unspecified woodlands, and in woodland edges and clearings (23 nests); in sand-dune areas with some grass, shrub, and tree growth (13 nests); in old orchards (2 nests); on farm and public lawns (2 nests); on overgrown, rocky outcroppings (1 nest); and along railway embankments (1 nest). Although most nests were in dry areas, 4 nests were reported in undescribed wet areas, 1 nest was in a wooded swamp, and another nest was in a shallow marsh.

Nests were both elevated above ground (173 nests) and placed on or very near the ground surface (105 nests). Elevated nests were placed in shrubs, small trees, plant clumps, and vine tangles. Deciduous shrubs and trees (11 spp., 72 nests) were somewhat preferred to coniferous types (5 spp., 47 nests), and those most frequently selected were hawthorn spp. (42 nests), spruce spp. (15 nests), pine spp. (12 nests), juniper spp. (11 nests), elm spp. (8 nests), apple (8 nests), and white cedar (8 nests). Tree nests were most often in main crotches at the trunk, although 5 nests were reported on branches out from the trunk. Ground nests were usually situated in clumps of grass, and most were under small trees or shrubs. One nest was reported 1.2 m (4 ft) distant from an occupied nest of American Robin, and another 4.6 m (15 ft) from that of an Eastern Meadowlark. Heights of 173 nests ranged from 0.07 to 1.5 m (0.25 to 5 ft), with 87 averaging 0.2 to 0.5 m (0.5 to 1.7 ft).

Nests were relatively small, frail cups with rough exteriors and neat bowls. Exteriors were composed of coarse and fine grasses, plant stalks, twigs, horse hair, rootlets, and spider webs. Linings were of fine grasses, hair (usually horse), rootlets, and pine needles. Five nests had outside diameters ranging from 8.5 to 11.5 cm (3.3 to 4.5 inches), inside diameters from 5 to 5.5 cm (2 to 2.2 inches), outside depths from 6 to 7.3 cm (2.4 to 2.9 inches), and inside depths from 3.2 to 5 cm (1.3 to 2 inches).

EGGS 188 nests with 1 to 5 eggs; 1E (7N), 2E (12N), 3E (50N), 4E (112N), 5E (7N).

Average clutch range 4 eggs (112 nests).

One nest contained 4 eggs of Field Sparrow and 1 egg of Gray Catbird (Fig. 180B).

Cowbird parasitism 334 nests with 62 parasitized (18.6%).

INCUBATION PERIOD 1 nest, ca 12 days.

EGG DATES 223 nests, 4 May to 9 August (234 dates); 112 nests, 26 May to 21 June.

Renesting was reported in a nearby new nest after a first nest was destroyed. The protracted period of egg dates suggests the probability of second broods.

Breeding Distribution

The Field Sparrow breeds throughout southern Ontario, although it is scarce on the Canadian Shield. A very few may breed in the extreme southern parts of northern Ontario.

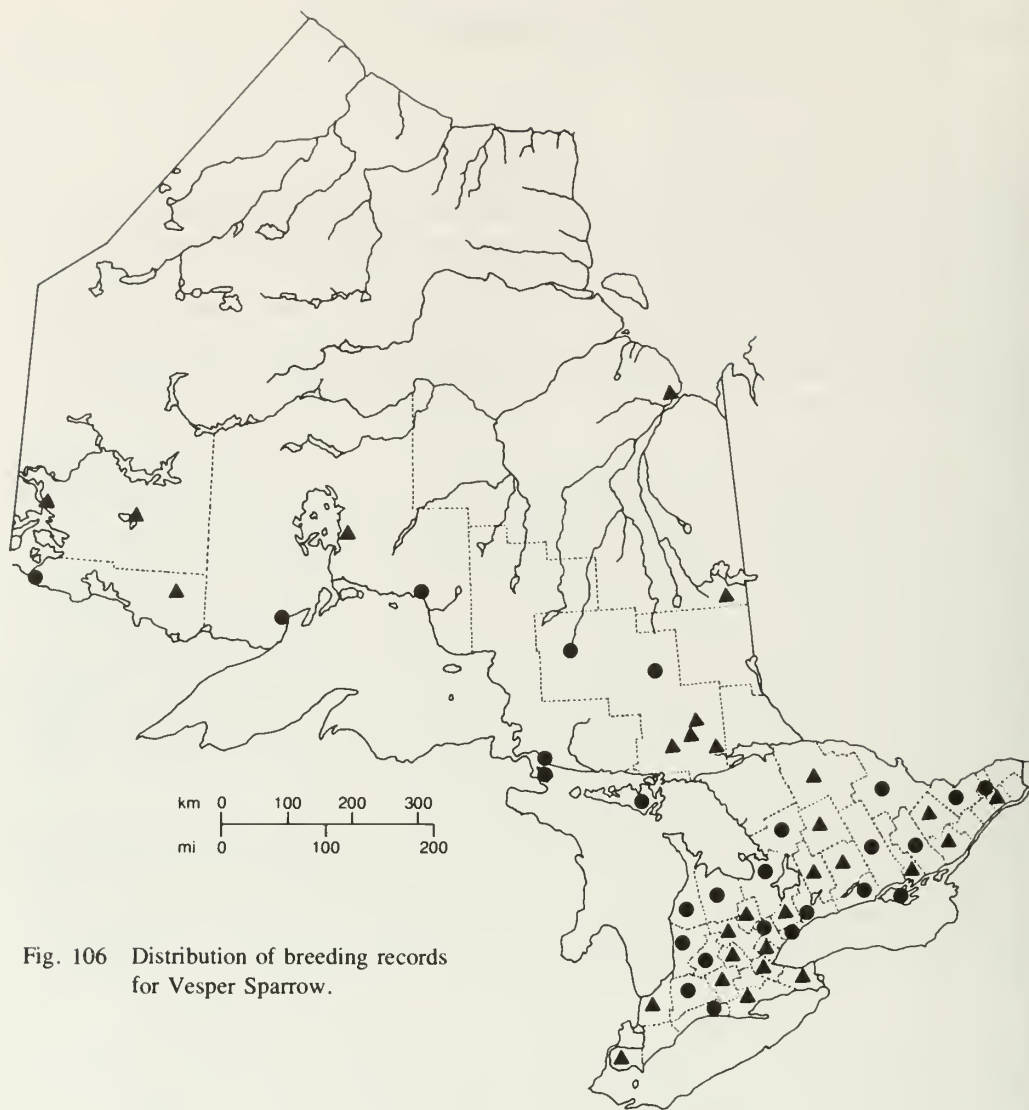


Fig. 106 Distribution of breeding records for Vesper Sparrow.

Vesper Sparrow, *Pooecetes gramineus* (Gmelin)

Nidiology

RECORDS 471 nests representing 43 provincial regions.

Breeds in grassy fields and pastures (159 nests) which are usually open but occasionally overgrown (9 nests); in cultivated grain, vegetable, and berry fields (44 nests); in young, open conifer plantations (21 nests); along road and railway right-of-ways (18 nests); in gravel pits (5 nests); in very open woodlands and recent burns (5 nests); in orchards (1 nest); and on golf courses (1 nest). One nest was located on earth dug from a pond. Although most nests were in dry locations, 3 were reported in marshy places, and 5 others in wet areas. Breeding habitats

most often were relatively flat land with a sparse ground cover (Fig. 187), and short-grass areas were preferred to long-grass areas.

Nests were almost invariably placed on the ground, although 1 nest was raised above the ground surface in a grass clump. Many ground nests were placed in slight depressions or hollows, and 1 of these was reported to have been excavated by the bird. Nests were often hidden in or under grass or weed plant clumps (88 nests); placed under or at the bases of small trees and shrubs (27 nests); beside logs and dead branches (4 nests); and under dead branches (2 nests). A few nests (8) were described as exposed.

Nests (Fig. 188B) were woven cups of grasses with a tendency to have shallow rather than deep bowls. Exteriors were composed of coarse and fine, dry grasses, with the occasional inclusion of other plant stalks, rootlets, mosses, fine twigs, and bark strips. Linings were characteristically of fine grasses and hair (both horse and moose hair were reported), and other materials were rootlets and down feathers. Outside diameters of 5 nests ranged from 8 to 10 cm (3.1 to 4 inches); inside diameters of 2 nests were 5 and 6 cm (2 and 2.4 inches); outside depths of 2 nests were 2 and 5 cm (0.8 and 2 inches); inside depth of 1 nest was 1 cm (0.4 inches).

EGGS 346 nests with 1 to 6 eggs; 1E (5N), 2E (29N), 3E (87N), 4E (200N), 5E (23N), 6E (2N).

Average clutch range 4 eggs (200 nests).

One nest contained 2 eggs of Vesper Sparrow and 2 eggs of Horned Lark.

Cowbird parasitism 442 nests with 47 parasitized (10.6%) (Fig. 188B).

From 1966 to 1984 in Grey County 15 of 44 nests were parasitized (34.1%), which may indicate a recent general increase in the amount of parasitism as well as a large local population of cowbirds. A recent increase in parasitism seems likely when these figures are compared with 46 nests from Middlesex County dating from 1877 to 1966 in which only 3 were parasitized (6.5%).

INCUBATION PERIOD 4 nests: 2 of at least 11 days, 1 of ca 12 days, 1 of less than 13 days.

EGG DATES 385 nests, 23 April to 3 August (418 dates); 192 nests, 27 May to 23 June. The protracted period of egg dates strongly suggests second broods, and once a second clutch was reported in the same nest that had contained young 1 week previously.

Breeding Distribution

The Vesper Sparrow breeds throughout southern Ontario, but in northern Ontario it seldom ranges north of the towns of Kenora and Cochrane. Across the north and on the Canadian Shield it is found only in areas where land has been cleared.

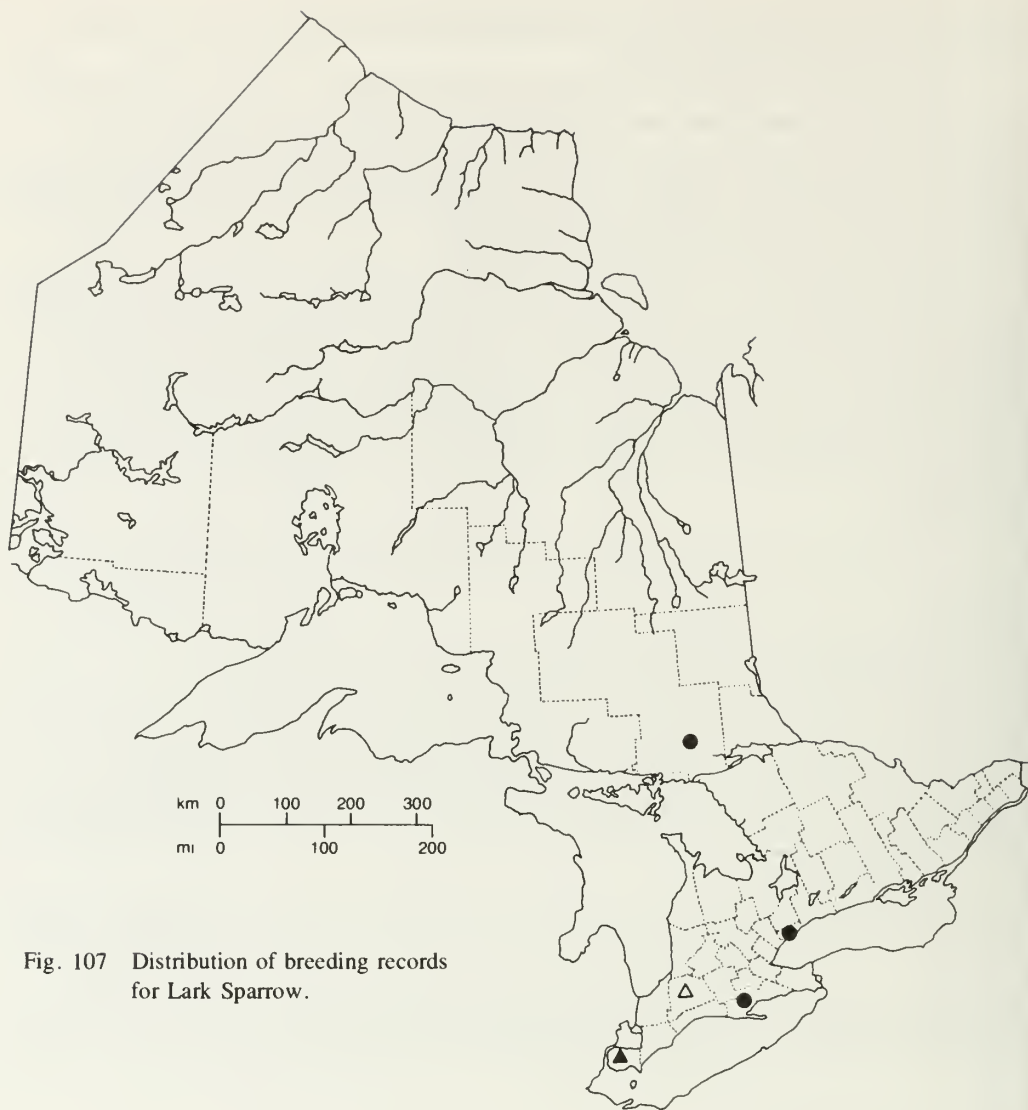


Fig. 107 Distribution of breeding records for Lark Sparrow.

Lark Sparrow, *Chondestes grammacus* (Say)

Nidiology

RECORDS 10 nests representing 4 provincial regions.

Breeds in conifer plantations with scattered trees (3 nests), in open deciduous woods in a city park (2 nests), on a roadside bank (1 nest), and in a garden hedge (1 nest). Five nests were in areas of sandy soil.

Most nests were situated on the ground (7 nests), with 1 elevated in a vine at a height of 1.1 m (3.5 ft). One nest was below an overhanging bank, 1 was under a small pine, and 1 was under a fallen oak branch. The elevated nest was in a honeysuckle sp. in a garden hedge.

Nests were formed of grasses and rootlets, with fine rootlets in their linings. Two nests had outside diameters of 8.25 and 12 cm (3.2 and 4.7 inches), inside diameters of 6 and 7 cm (2.4 and 2.8 inches), outside depths of 4 and 4.25 cm (1.6 and 1.7 inches), and inside depths of 2.25 and 2.75 cm (0.9 and 1.1 inches).

EGGS 8 nests with 3 to 5 eggs; 3E (2N), 4E (3N), 5E (3N).

Average clutch range 4 to 5 eggs (6 nests).

Cowbird parasitism 8 nests with 1 parasitized (12.5%).

INCUBATION PERIOD 1 nest, no more than 11 days.

EGG DATES 7 nests, 15 May to 1 July (9 dates); 3 nests, 31 May to 14 June.

Breeding Distribution

The Lark Sparrow is a rather rare and irregular nester in the now largely agricultural Deciduous Forest region. In the prairie provinces this species is known to wander and nest locally well north of its usual summering areas. A nest in northern Ontario in Sudbury district was an isolated occurrence a considerable distance from regions where it might ordinarily be expected to occur.



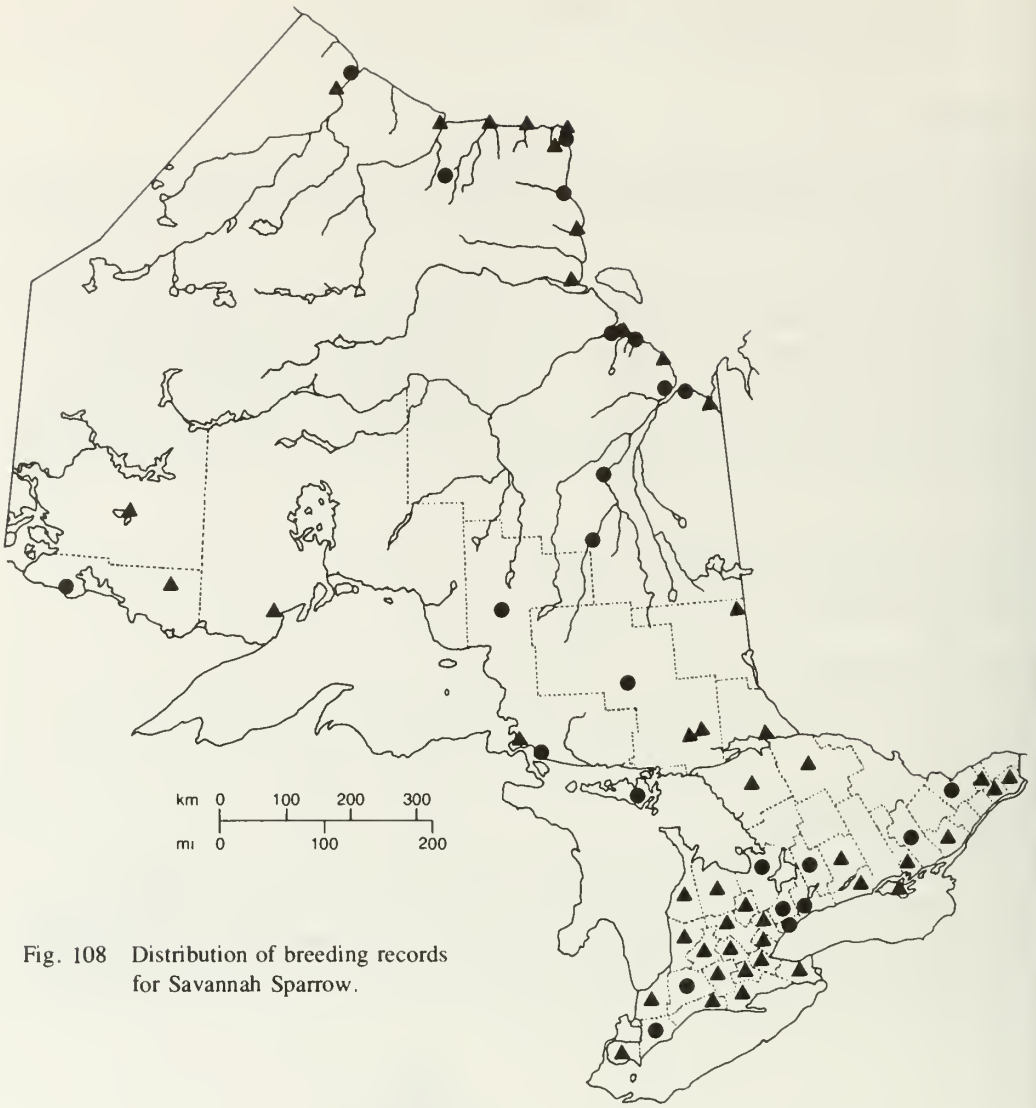


Fig. 108 Distribution of breeding records for Savannah Sparrow.

Savannah Sparrow, *Passerculus sandwichensis* (Gmelin)

Nidiology

RECORDS 558 nests representing 44 provincial regions.

Breeds in southern Ontario in rural areas: in grass fields, hay and clover fields, and occasionally grain fields (140 nests; Fig. 187); in both open and overgrown pasture fields (96 nests); in other grassy areas such as playing fields, campgrounds, airfields, lawns, young conifer plantations, and orchards (12 nests); on grassy dunes, river banks, flood plains, and shorelines (10 nests); on roadsides, embankments, and fencerows (9 nests); among mine tailings and in lumberyards (8 nests); on blueberry barrens (1 nest); in heath bogs (1 nest); and on a rocky island near a tern colony (1 nest). It breeds in various habitats in northern Ontario: in sedge and grass marshes (25 nests), on grass/lichen tundra (14 nests; Fig. 145), in muskeg (fen and bog) areas (13 nests), and in salt marshes (4 nests). Nest habitats were both dry and wet, were usually relatively open, and contained sufficient growths of grasses, sedges, or other plants to provide nest locations and concealment.

With 1 exception, a nest in a small cedar in a short cedar thicket at a height of 0.3 m (1 ft), all reported nests were on or very close to the ground surface. Most were in small depressions (1 in the side of a mossy hummock) and were concealed in grasses, sedges, weeds, cattails, and occasionally stems of shrubs. Some nests were at or under the bases of shrubs, seedling trees, and clumps of various plants and grasses. One nest was reported in a clump of willow standing in 15 cm (6 inches) of water. A number of nests were noted to be partially or completely arched over with vegetation, although 3 nests were fully exposed. One nest was 23 m (75 ft) distant from a nest of Northern Harrier.

Most nests were described as neat, shallow cups, with a few noted to be thin and flimsy. Exteriors were woven of fine and coarse grasses, sedges, other plant stalks and fibres, rootlets, mosses, hair, and string. Linings were of fine grasses, plant stalks, rootlets, and hair. Twelve nests had outside diameters ranging from 6.5 to 12.3 cm (2.5 to 4.8 inches), inside diameters from 5 to 7.8 cm (2 to 3 inches), outside depths from 3 to 9 cm (1.2 to 3.5 inches), and inside depths from 2 to 6 cm (0.8 to 2.4 inches).

EGGS 364 nests with 1 to 6 eggs; 1E (8N), 2E (19N), 3E (59N), 4E (197N), 5E (75N), 6E (6N).

Average clutch range 4 eggs (197 nests).

Cowbird parasitism 531 nests with 39 parasitized (7.3%).

INCUBATION PERIOD 3 nests: 1 of no more than 9 days, 1 of ca 12 days, 1 of 13 days.

The 9-day period seems very short, but the record appears to be reliable and may indicate that incubation commenced before the clutch was complete.

EGG DATES 398 nests, 27 April to 9 August (425 dates); 199 nests, 30 May to 20 June.

The protracted period of egg dates strongly suggests double broods.

Breeding Distribution

The Savannah Sparrow breeds throughout Ontario.

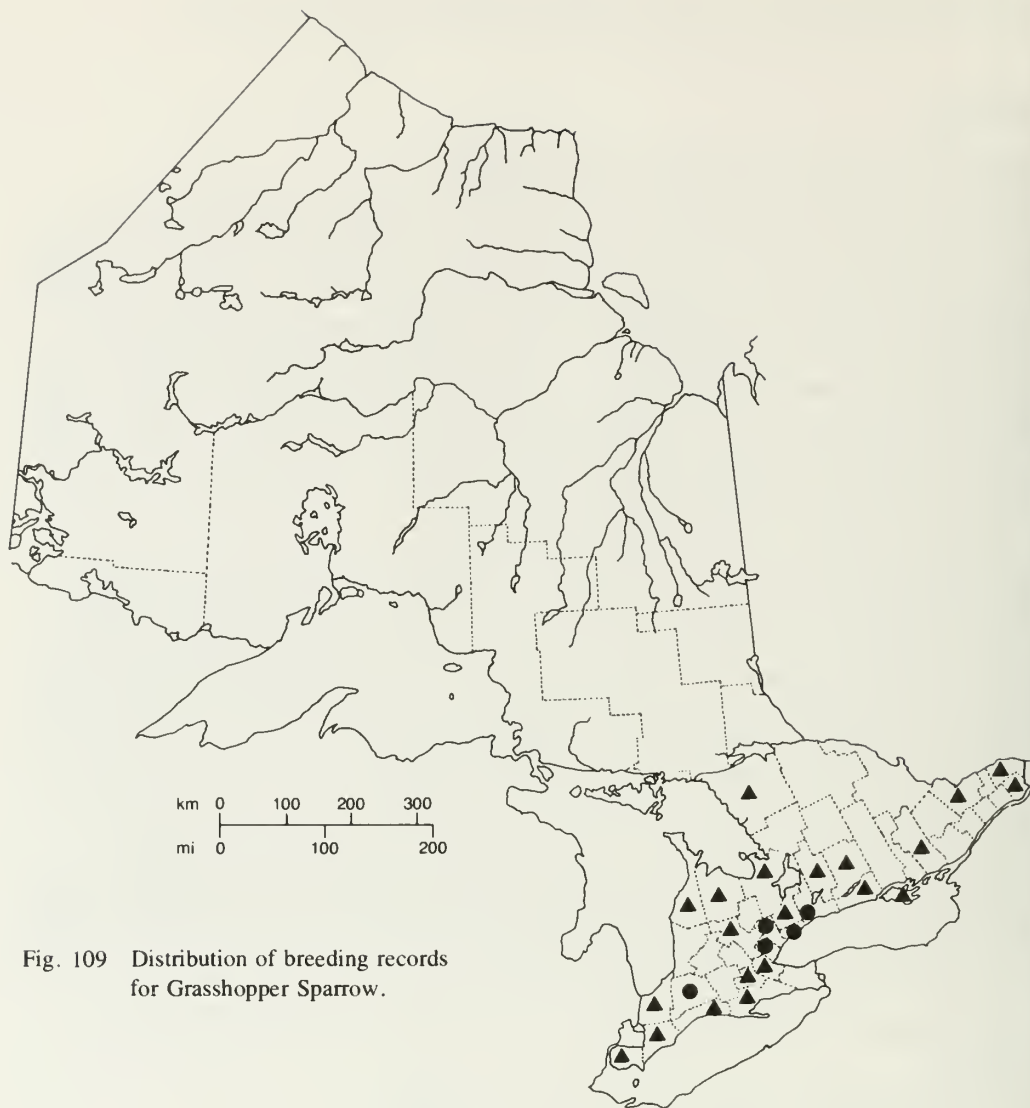


Fig. 109 Distribution of breeding records for Grasshopper Sparrow.

Grasshopper Sparrow, *Ammodramus savannarum* (Gmelin)

Nidiology

RECORDS 76 nests representing 23 provincial regions.

Breeds in short- and long-grass areas, hayfields, and pastures often overgrown with shrubs and small trees (35 nests; Fig. 185); Christmas tree and other conifer plantations in grassy fields (23 nests); road and railway right-of-ways (8 nests); a grass- and cedar-covered island near a gull colony (1 nest); and a beach savannah (1 nest).

Nests were almost invariably in depressions on the ground, in or under dead and occasionally living clumps of grasses and other plants. An exceptional nest was 7.6 cm (3 inches) above ground in the crotch of the lowest branch of a 0.6-m (2 ft) red pine. Some nests were near trees and logs, and 8 nests were under small trees or dead branches.

Nests were well-concealed, tightly woven cups, and most were partially domed over by nearby grasses and other vegetation. Nest exteriors were of coarse grasses with the occasional inclusion of plant stalks and fibres, and rootlets. Linings were of fine grasses, and sometimes hairs and plant fibres. Three nests had outside diameters of 10 cm (4 inches), inside diameters ranging from 5 to 6 cm (2 to 2.4 inches), outside depths ranging from 4 to 5.5 cm (1.6 to 2.2 inches), and inside depths ranging from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 59 nests with 1 to 5 eggs; 1E (1N), 2E (4N), 3E (6N), 4E (21N), 5E (27N).

Average clutch range 4 to 5 eggs (48 nests).

Cowbird parasitism 74 nests with 6 parasitized (8.1%).

INCUBATION PERIOD 4 nests: 1 of 11 days, 1 of ca 11 days, 2 of at least 11 days.

EGG DATES 50 nests, 4 May to 12 August (68 dates); 25 nests, 5 June to 20 June.

The protracted period of egg dates suggested the probability of second broods, although none were reported.

Breeding Distribution

The Grasshopper Sparrow (Fig. 186A) breeds at scattered localities in the agricultural parts of southern Ontario. While potentially it may be found throughout southern Ontario, the unsuitable nature of the habitat on the Canadian Shield virtually precludes nesting there.

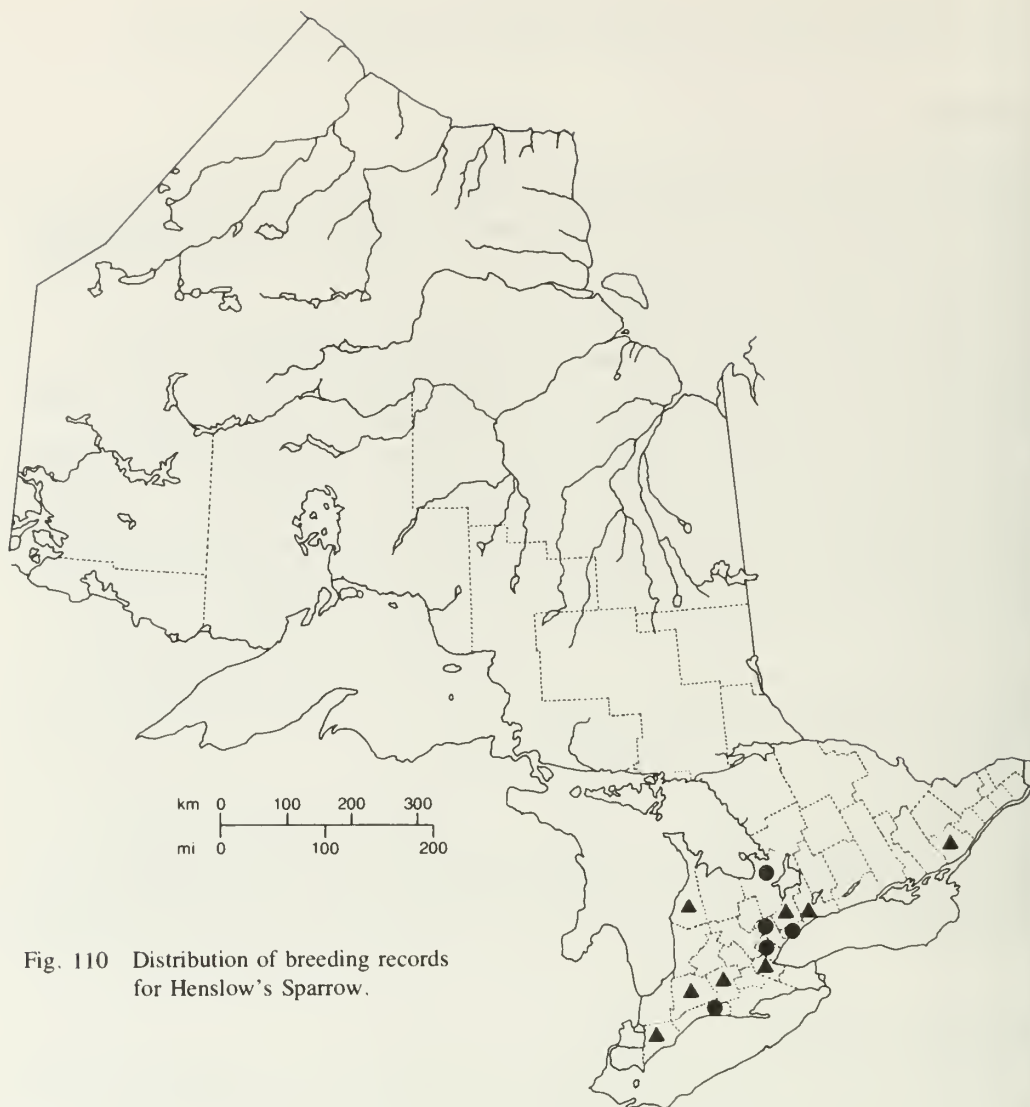


Fig. 110 Distribution of breeding records for Henslow's Sparrow.

Henslow's Sparrow, *Ammodramus henslowii* (Audubon)

Nidiology

RECORDS 13 nests representing 11 provincial regions.

Breeds in hay fields, meadows, and pastures, all with characteristically tall growths of grasses, legumes, and other plants (Fig. 185). Several nests were reported in wet or damp areas, and 1 field contained some small, scattered shrubs. Nesting was usually in small, loose colonies of several pairs, and 1 nest was 61 m (200 ft) distant from another.

Nests were well hidden in, and supported by, clumps of tall vegetation (often old and dead). Positions varied from ground level to a height of 0.2 m (0.5 ft). Nest structures were neat and substantial cups of grasses, lined with finer grasses. Six nests had outside diameters that ranged from 9 to 13 cm (3.5 to 5.1 inches), inside diameters from 4.5 to 6 cm (1.8 to 2.4 inches), outside depths from 4 to 7.5 cm (1.6 to 3 inches), and inside depths from 2.8 to 5 cm (1.1 to 2 inches).

EGGS 12 nests with 2 to 5 eggs; 2E (1N), 3E (2N), 4E (6N), 5E (3N).

Average clutch range 4 eggs (6 nests).

Cowbird parasitism 12 nests with 1 parasitized (8.4%).

INCUBATION PERIOD No information.

EGG DATES 8 nests, 2 June to 14 August (10 dates); 4 nests, 7 June to 5 July.

Breeding Distribution

Henslow's Sparrow (Fig. 186B) is known to nest only in the agricultural areas of southern Ontario. Even in these regions a lack of suitable habitat and disturbances in nesting colonies have apparently almost eliminated this species as a breeding bird in the province.



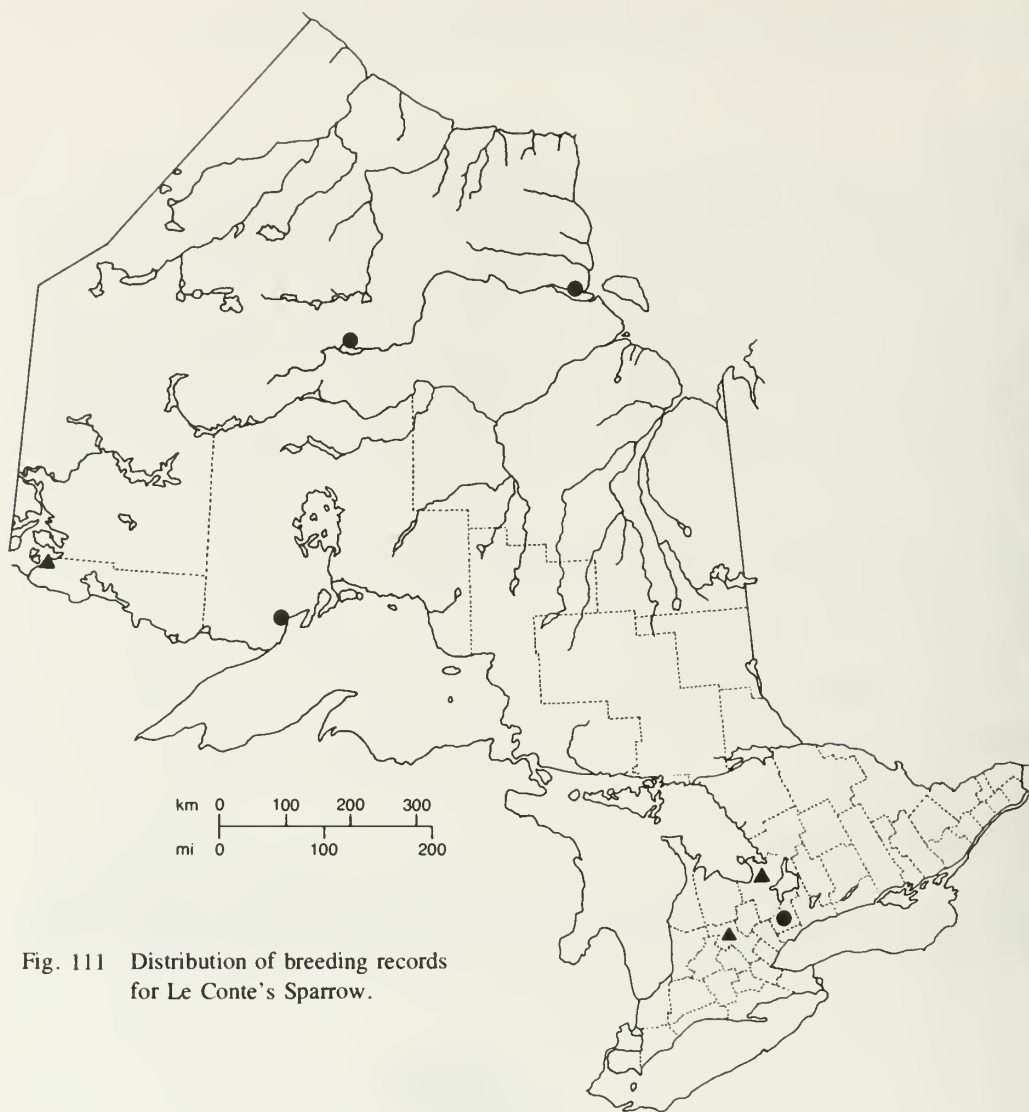


Fig. 111 Distribution of breeding records for Le Conte's Sparrow.

Le Conte's Sparrow, *Ammodramus leconteii* (Audubon)

Nidiology

RECORDS 6 nests representing 2 provincial regions.

Only 6 nests of this secretive sparrow have been found in Ontario, 1 recently (1979) in Rainy River District and 5 earlier nests (1924 to 1952) in Thunder Bay District. One nest was on damp ground on the edge of a swamp, and a second was on a grassy dike between stands of wild rice. Wet areas or their edges appear to be characteristic habitat for the species.

Nests were on the ground in tall grass, and 1 nest was placed under an old mouse nest.

One nest was described as a grass cup lined with a few hairs. Another nest was composed entirely of grass, with coarse grasses on the outside and fine grasses in the lining. This latter nest had an outside diameter of 11 cm (4.3 inches), inside diameter of 5.5 cm (2.2 inches), outside depth of 6.5 cm (2.6 inches), and inside depth of 4.5 cm (1.8 inches).

EGGS 6 nests with 4 to 5 eggs; **4E** (5N), **5E** (1N).

INCUBATION PERIOD No information.

EGG DATES 6 nests, 3 June to 16 June (7 dates).

Breeding Distribution

Although the Le Conte's Sparrow has been seen at a number of places that would indicate a wide range in Ontario, it is to be found only very locally in the province, and its actual distribution in summer is poorly documented. It is to be expected across northern Ontario as far north as the latitude of Attawapiskat and probably north to Hudson Bay at least at Winisk (Schueler et al., 1974). In southern Ontario it may now be completely absent or of local and/or irregular occurrence. Breeding records extended as far south as Simcoe County (Devitt, 1938) and York RM, however, indicating that where conditions are suitable, the birds may still be found breeding at that latitude.



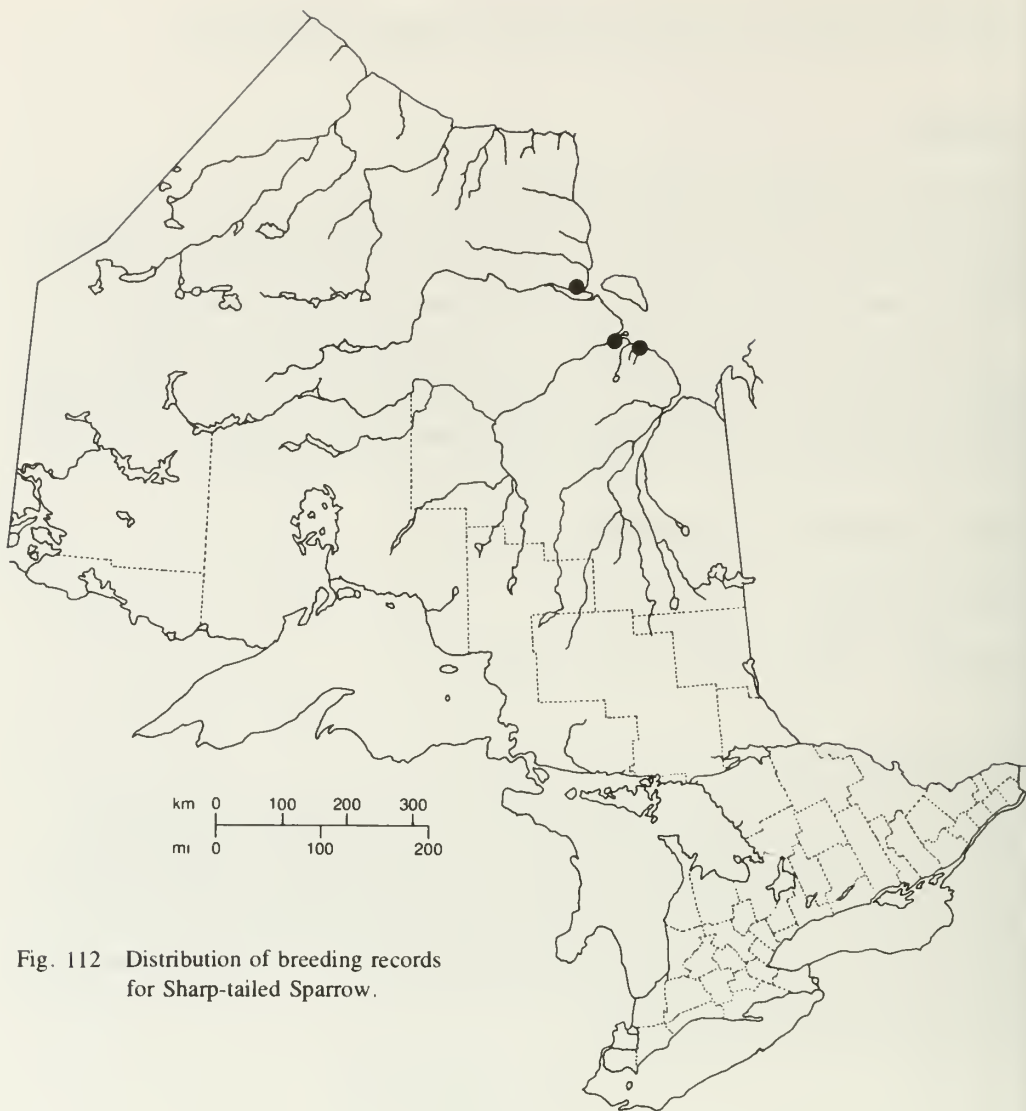


Fig. 112 Distribution of breeding records for Sharp-tailed Sparrow.

Sharp-tailed Sparrow, *Ammodramus caudacutus* (Gmelin)

Nidiology

RECORDS 2 nests representing 1 provincial region.

Two nests of this marsh-breeding sparrow have been found in the province, both in the summer of 1942, and both in the same general area on the southwest coast of James Bay.

Both nests were near the bay: the first nest, containing 4 eggs, was found at Fort Albany, in a grassy area in a clearing along a moist ditch, on 25 June, by S. C. Downing; the second nest, also containing 4 eggs, was found at the mouth of the Nettichi River, at the edge of a brackish pool on the coast, on 16 July, by C. E. Hope.

The first nest was several centimetres off the ground and supported by dead, coarse grass; the nest and eggs (ROM 3948) and female adult were collected. The second nest was on the ground in short grass; the nest and eggs were collected (ROM 3949). Both nests had deep bowls and incurved rims, and at least 1 of them had its opening positioned vertically so that its depth was more or less parallel with the ground. They were formed of coarse grasses and sedges on their exterior, and their linings were of fine grasses. The two nests had outside diameters of 9 and 10 cm (3.5 and 3.9 inches), inside diameters of 4.5 and 5 cm (1.8 and 2 inches), outside depths of 10 and 7 cm (3.9 and 2.8 inches), and inside depths of 7 and 4 cm (2.8 and 1.6 inches).

Breeding Distribution

In Ontario, the Sharp-tailed Sparrow (Fig. 164A) appears to be exclusively a maritime breeding species. The first breeding evidence obtained in the province came from Attawapiskat in 1939, and the first nests were found in 1942, also along the southern James Bay coast (Baillie, 1960). Later exploration revealed that it is found mainly along the James Bay coast, but is also found along the shores of Hudson Bay at least as far west as Winisk (Manning, 1952; Schueler et al., 1974). A disjunct inland population breeds in the prairie provinces, and a few birds from that population may breed as far east as extreme western Ontario, but none have thus far been recorded.



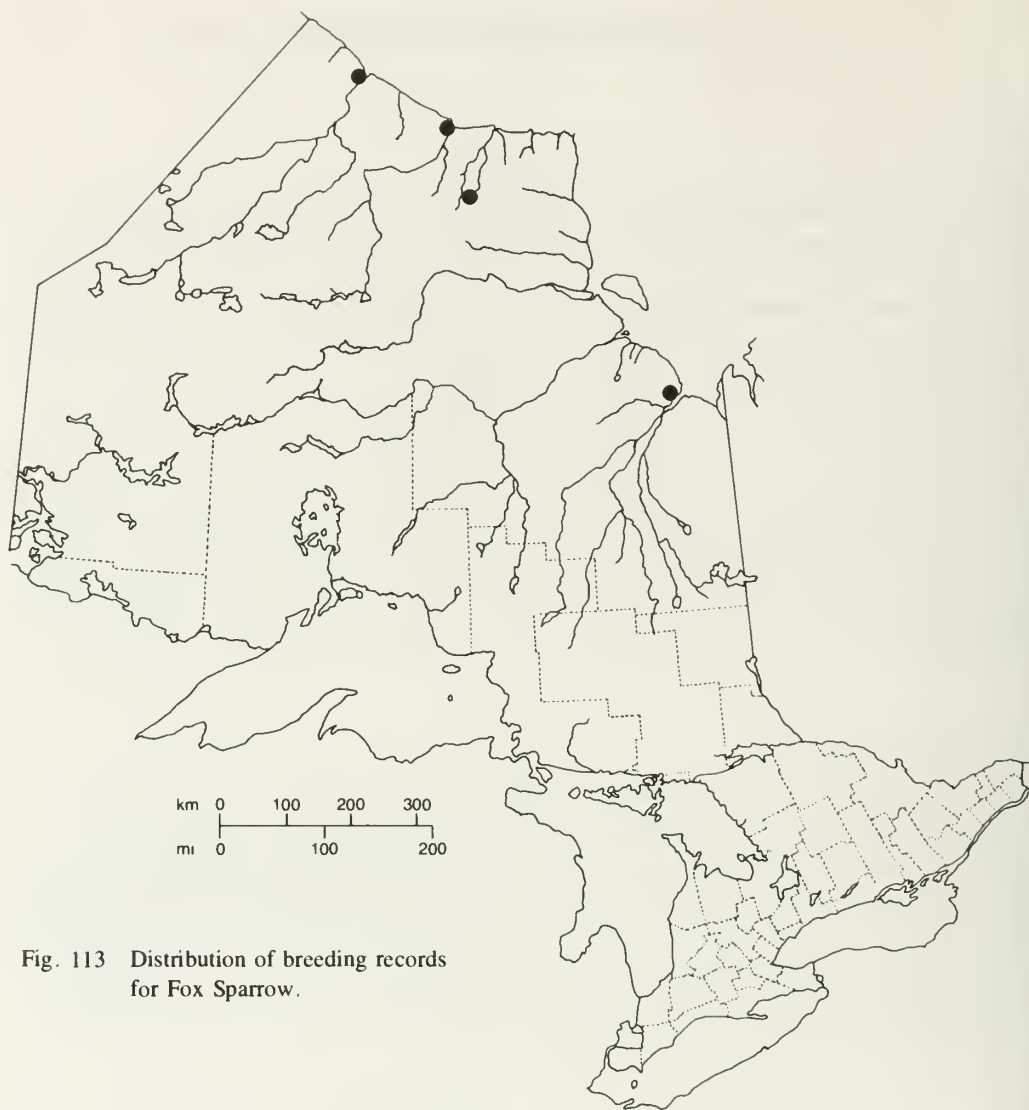


Fig. 113 Distribution of breeding records for Fox Sparrow.

Fox Sparrow, *Passerella iliaca* (Merrem)

Nidiology

RECORDS 5 nests representing 2 provincial regions.

Two of the 5 Ontario nests of Fox Sparrow were found at Moose Factory in Cochrane District in 1860 and 1934, and 1 of them was in a balsam poplar thicket. Three nests were subsequently found in Kenora District: in 1940 at Fort Severn, a nest was located in a muskeg of stunted spruce/tamarack; in 1965 at Winisk, a nest was discovered near the Indian settlement in an open area interspersed with ponds, and with growths of black spruce, tamarack, poplar, dwarf birch, and willow; and in 1980 at Aquatuk Lake, a nest was found in a black spruce muskeg with associated growths of Labrador tea and swamp laurel.

Two nests were on the ground, 1 at the base of a sphagnum hummock, and the other under a small black spruce. Two other nests were elevated, 1 in a small black spruce at a height of 0.6 m (2 ft), and the other tucked between a balsam fir and a stump at a height of 0.5 m (1.5 ft).

Nest exteriors were formed of grasses, twigs, plant stalks, and lichens; linings were of hair (porcupine and caribou were noted) and fine grasses.

Two nests had outside diameters of 14 and 15 cm (5.5 and 5.9 inches), inside diameters of 6 and 6 cm (2.4 inches), outside depths of 7 and 8 cm (2.8 and 3.1 inches), and inside depths of 4 and 4 cm (1.6 inches).

EGGS 5 nests with 3 to 4 eggs; **3E** (3N), **4E** (2N).

INCUBATION PERIOD No information.

EGG DATES 5 nests, 2 June, 6 June, 8 June, 23 June, and 17 July.

Breeding Distribution

Although Baillie and Harrington (1937) did not include the Fox Sparrow (Fig. 160A) on their list of breeding birds of Ontario, the eggs of this species were collected as long ago as 1860 at Moose Factory (Baillie, 1958). Additional nesting and breeding reports have been difficult to obtain, but the presence of summering birds indicates that it breeds across northern Ontario as far south as Favourable Lake, Pickle Lake, and Moosonee.

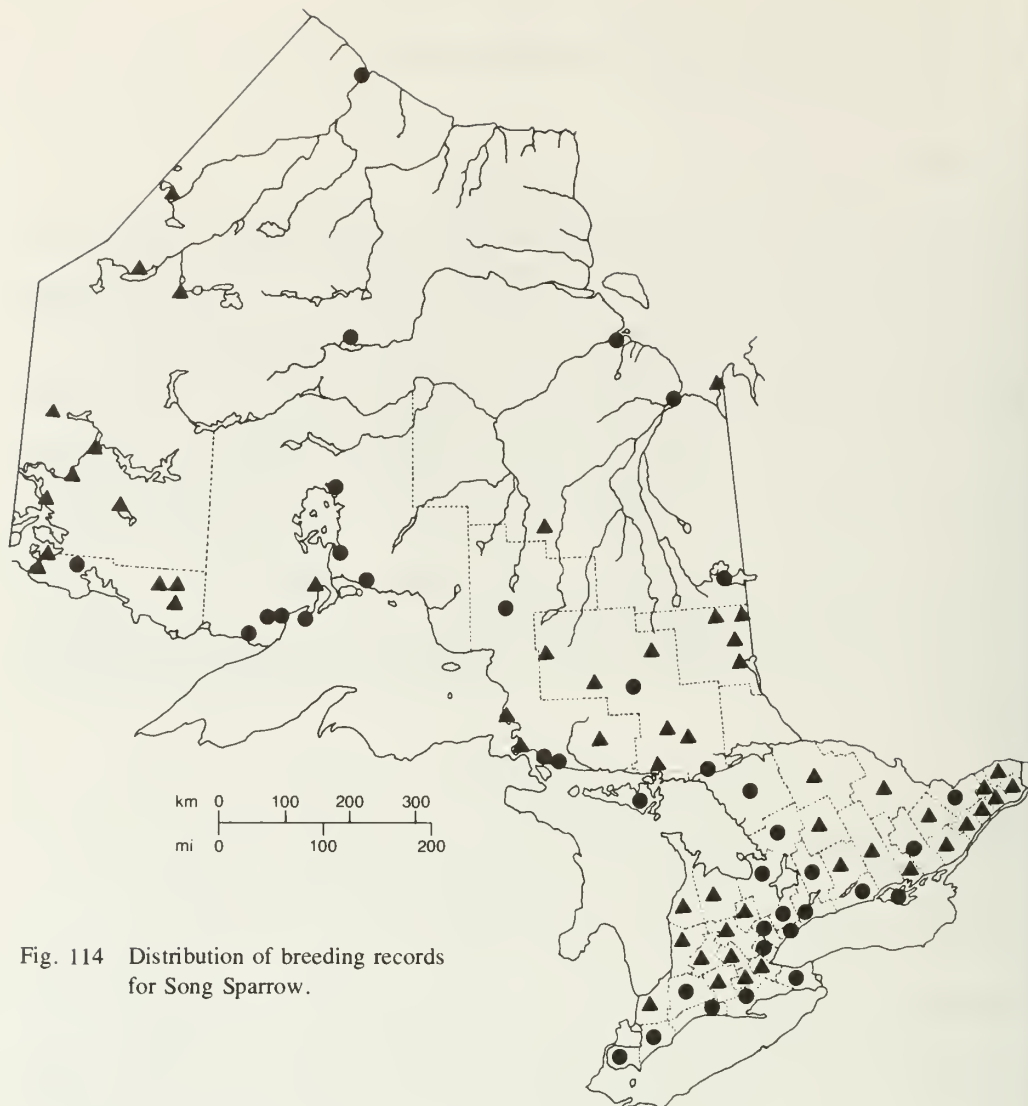


Fig. 114 Distribution of breeding records for Song Sparrow.

Song Sparrow, *Melospiza melodia* (Wilson)

Nidiology

RECORDS 1909 nests representing all 52 provincial regions.

Breeds in a variety of relatively open habitats, usually having an abundance of low, shrubby growth, and/or thickets.

Based on 655 records, breeding habitats were: farmland, including fields, conifer plantations, pastures, willow swales and wet meadows, orchards/vineyards/raspberry patches, hedgerows, and gravel pits (265 nests); woodlands, including bogs, swamps, beaver ponds, and burns (111 nests); rural and urban populated areas, including gardens, cottage/campground areas, and cemeteries (91 nests); river valleys and shorelines of lakes/river/ponds/marshes (83 nests); road, railway, and hydro right-of-ways (57 nests); rocky islands and outcroppings (38 nests); and sand-dune areas (10 nests). Wooded areas were

usually open or nests were at their edges. Most habitats were dry, but 205 nests were near water or in wet areas. Although habitats were listed as described, categories often overlapped.

Most nests (472) were on the ground, but many (302) were elevated in shrubs, trees, vines, and non-woody plants, on manmade objects and buildings, and on muskrat houses and brush piles. Ground nests were usually well concealed and were placed in or under clumps of grasses, other plants, ferns, and mosses; under trees, shrubs, and vines; under fallen branches, brush piles, dead leaves and litter, logs, and roots; under sand-bank overhangs; at the bases of stumps, fence posts, and boulders; and on an anthill. A number of nests (29) were on bare ground, with 9 of them in ground depressions. One ground nest was under a piece of plywood obliquely imbedded in the sand on a beach. Usually elevated nests were placed at low levels in coniferous trees and shrubs (7 spp., 143 nests), and in deciduous trees, shrubs, and vines (21 spp., 117 nests); the most frequently selected were juniper spp. (48 nests), white cedar (34 nests), spruce spp. (29 nests), hawthorn spp. (27 nests), pine spp. (25 nests), and raspberry and other *Rubus* spp. (20 nests). Other elevated nests were in tufts of grass (17 nests), in cattails/sedge/rush (7 nests), in goldenrod (4 nests), in vetch (3 nests), in ferns (2 nests), and 1 each in artichoke, loosestrife, and chrysanthemum; in cavities in stumps and trees (4 nests); and 1 nest each in a roll of fence wire, on a low wire fence in a grass clump, in weeds left in a wheelbarrow, in a boathouse on a ledge, in a haycock, in a bed of plants in a greenhouse, in a tin can, and in a depression in mosses and grass covering a stump and roots. In preferred breeding habitats Song Sparrow nests were sometimes relatively near each other. One nest was reported 9 m (30 ft) from an active nest of Cedar Waxwing, another was 12 m (40 ft) from a Loggerhead Shrike nest, a third was 30 m (100 ft) from a Field Sparrow nest, and a fourth was near a Purple Finch nest. Heights of 242 nests in shrubs and trees ranged from 0.08 to 3.7 m (0.25 to 12 ft), with 121 averaging 0.3 to 0.9 m (1 to 3 ft). Three nests in cattails were each at a height of 0.6 m (2 ft), and a nest in tall grass over water was at a height of 1.2 m (4 ft).

Nests were described as well-made cups, sometimes bulky, and occasionally shallow. Exteriors were characteristically woven of grasses and straw, often homogeneously (275 nests—42%), or in combination with plant stalks and fibres, rootlets, hair, leaves, bark, twigs, conifer needles, mosses, string, and plastic. Linings were of fine grasses, hair, plant stalks and fibres, porcupine quills, conifer needles, plant down, feathers, rootlets, and leaves. A nest was reported that had been built on top of a nest of Red-winged Blackbird. Five nests had outside diameters ranging from 9.5 to 13 cm (3.7 to 5.1 inches), inside diameters from 6 to 10 cm (2.4 to 3.9 inches), outside depths from 8 to 10 cm (3.1 to 4 inches), and inside depths from 4 to 9 cm (1.6 to 3.5 inches). A nest cavity in a cedar stump, with a bole diameter of 20 cm (8 inches), had a depth of 20 cm (8 inches) and a diameter of 10 cm (4 inches).

EGGS 503 nests, with 1 to 8 eggs; 1E (2N), 2E (10N), 3E (63N), 4E (173N), 5E (215N), 6E (30N), 7E (8N), 8E (2N).

Average clutch range 4 to 5 eggs (388 nests).

Both 8-egg clutches were found in Prince Edward County, but in different years. Although eggs were usually laid at daily intervals, a delay of 3 days was reported between the second and third eggs in 1 clutch. At least 3 clutches of 2 eggs produced young.

Cowbird parasitism 1812 nests with 420 parasitized (23.2%).

One nest contained 1 Song Sparrow egg and 10 eggs of Brown-headed Cowbird.

INCUBATION PERIOD 11 nests, 11 to 15 days: 3 of 11 days, 1 of ca 11 days, 1 of at least 11 days, 1 of 12 days, 1 of ca 12 days, 2 of at least 12 days, 1 of 13 days, 1 of 15 days.

Incubation usually commenced with the laying of the last egg, but at 1 nest hatching took 2 days and at another nest there was a delay of ca 12 days between the last egg and the onset of incubation.

EGG DATES 529 nests, 17 April to 3 September (678 dates); 265 nests, 24 May to 20 June. Renestings and double broods were both reported. Clutch sizes of late nestings averaged smaller, and all August clutches were of 3 and 4 eggs.

Breeding Distribution

The Song Sparrow breeds throughout Ontario, but is very scarce or absent from large areas of the north, particularly the extreme northeast.

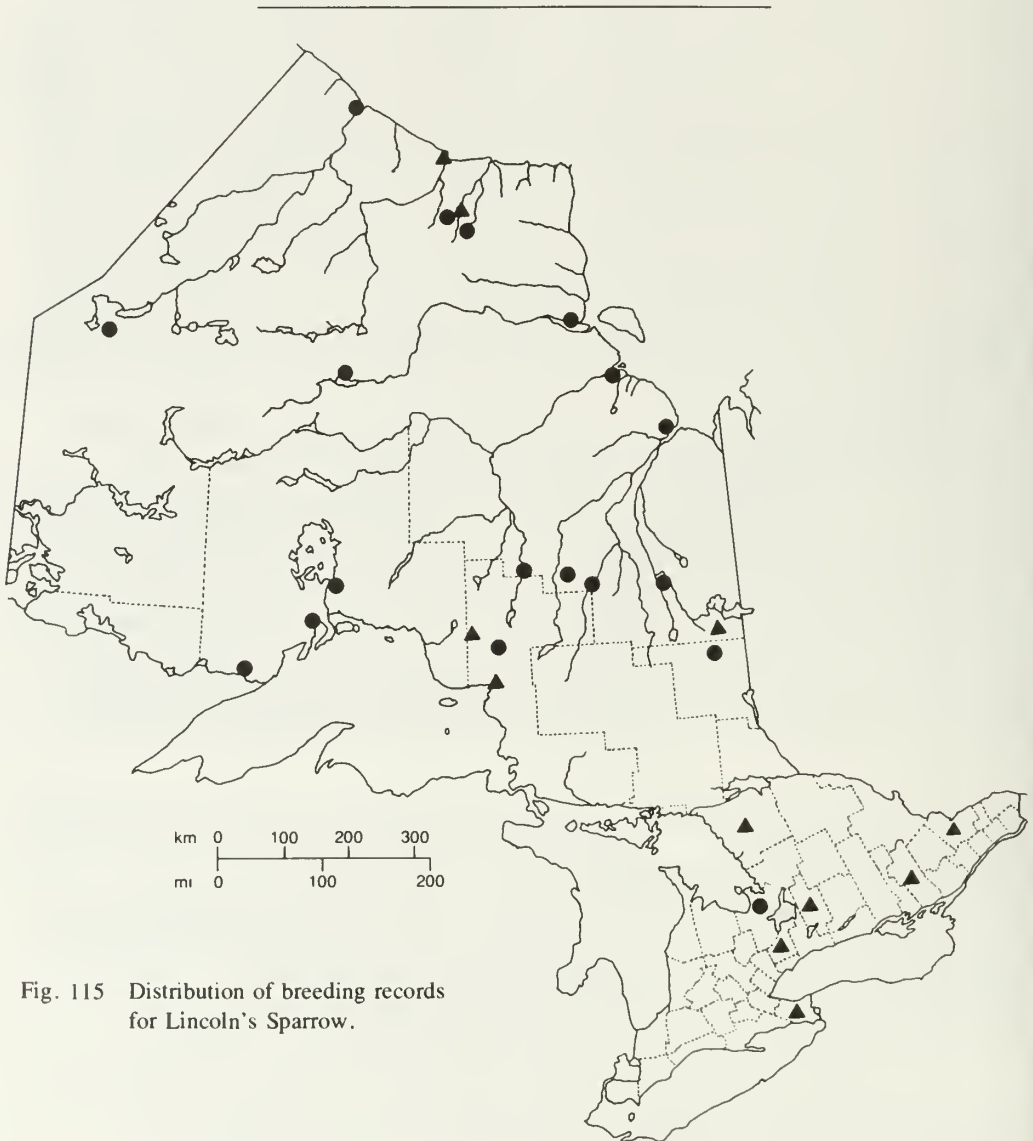


Fig. 115 Distribution of breeding records for Lincoln's Sparrow.

Lincoln's Sparrow, *Melospiza lincolnii* (Audubon)

Nidiology

RECORDS 24 nests representing 8 provincial regions.

Breeds in bogs and fens with growths of sphagnum, grass, sedge, swamp laurel, Labrador tea, willow, black spruce, and tamarack (11 nests); in alder and willow swales (4 nests); in brushy, roadside clearings (2 nests); in a small black spruce grove (1 nest); in a rural garden near a woods (1 nest); on a river bank with fern clumps (1 nest); and in a wet pasture (1 nest). Among 21 specified nest sites, only 4 were in dry situations. Treed areas were usually open, and 2 bog areas had been old burns.

Nests were usually on the ground, in moss, or in moss and/or grass/sedge hummocks (12 nests); in a fern clump (1 nest); and in goldenrod stems and raspberry canes (1 nest). Three nests were elevated in shrubs: 1 in a vertical fork at 0.2 m (0.5 ft) over water, another in low growth 0.2 m (0.5 ft) above water, and a third in a fork of a willow clump at a height of 0.3 m (1 ft). Nine ground nests were situated at the bases of small trees and shrubs.

Nests were described as deep cups, and were often concealed by standing dead grasses and sedges. Exteriors were composed invariably of grasses and/or sedges, with mosses, plant stalks, leaves, and vetch pods sometimes included. Inner walls were of sphagnum, and 1 nest had a woven rim of thick sedge blades. Linings were also mostly of grasses/sedges with rootlets occasionally added, and in 1 nest cotton grass was mentioned. Two nests were noted to resemble nests of Song Sparrow. Six nests had outside diameters that ranged from 10 to 11 cm (3.9 to 4.3 inches), inside diameters from 5 to 5.5 cm (2 to 2.2 inches), outside depths from 5.5 to 7 cm (2.2 to 2.8 inches), and inside depths from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 21 nests with 3 to 5 eggs; 3E (2N), 4E (15N), 5E (4N).

Average clutch range 4 eggs (15 nests).

Cowbird parasitism 23 nests with 1 parasitized (4.3%).

INCUBATION PERIOD 1 nest, 12 days.

EGG DATES 20 nests, 16 May to 2 August (25 dates); 10 nests, 13 June to 24 June.

The protracted period of egg dates suggested double broods, although none were reported.

Breeding Distribution

The Lincoln's Sparrow breeds throughout northern Ontario. While potentially it may also be found throughout southern Ontario, it is very locally distributed and, apart from areas on the Canadian Shield from Muskoka DM and Haliburton County northwards, is probably only an irregular breeder, in the few remaining suitable southern bogs and fens.

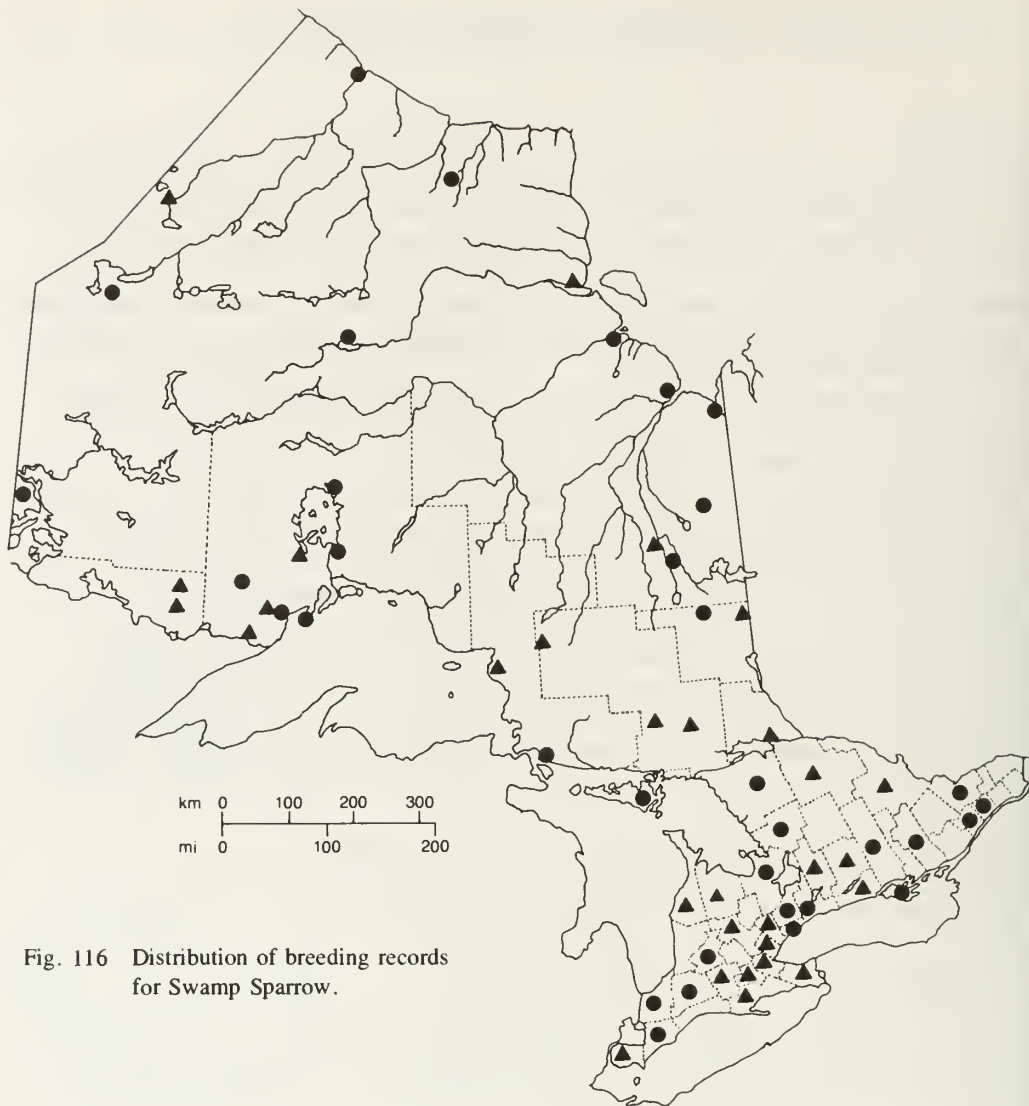


Fig. 116 Distribution of breeding records for Swamp Sparrow.

Swamp Sparrow, *Melospiza georgiana* (Latham)

Nidiology

RECORDS 246 nests representing 39 provincial regions.

Breeds in wet areas: in marshes of sedges and grasses, cattails, and other marsh plants, and in marshy edges of lakes and rivers (99 nests); in bogs and fens with growths of small conifers and shrubs present (31 nests); in shrubby areas in swamps, sedge meadows, and shorelines, and in willow thickets (22 nests); in wet pastures (4 nests); and in beaver ponds (3 nests).

Most nests were slightly elevated over ground or water, with some positioned on the ground. Elevated nests were in sedge or grass clumps (84 nests), in cattails (21 nests), in shrubs (16 nests), in vines in an evergreen shrub (1 nest), and on top of an overgrown stump (1 nest). There were 41 ground nests described and these were under grasses, other plant clumps, ferns, and bushes and small trees. Four ground nests were on mossy hummocks, and 1 nest had a short tunnel leading to it under the grass. Elevated shrub nests were usually in deciduous types (6 spp., 16 nests), with 1 nest recorded in a white cedar. Heights of 139 nests ranged from 0.08 to 0.9 m (0.25 to 3 ft), with 69 averaging 0.2 to 0.3 m (0.8 to 1 ft).

Nests were bulky cups with somewhat rough exteriors and neatly woven interiors. Exteriors were composed of coarse, dry grasses and sedges, other plant stalks, cattails, twigs, fern fronds, leaves, and rootlets. Linings were of fine grasses and sedges, with the occasional addition of hair, rootlets, plant fibres, and plant down. Six nests had outside diameters ranging from 8 to 15 cm (3.1 to 6 inches), inside diameters from 5 to 8 cm (2 to 3.1 inches), outside depths from 7 to 10 cm (2.8 to 3.9 inches), and inside depths from 4 to 5 cm (1.6 to 2 inches).

EGGS 170 nests with 1 to 6 eggs; 1E (11N), 2E (8N), 3E (27N), 4E (78N), 5E (45N), 6E (1N).

Average clutch range 4 to 5 eggs (123 nests).

Cowbird parasitism 236 nests with 31 parasitized (13.1%).

INCUBATION PERIOD 1 nest, not more than 14 days.

EGG DATES 179 nests, 24 April to 25 July (189 dates); 89 nests, 28 May to 14 June.

Breeding Distribution

The Swamp Sparrow breeds throughout Ontario.

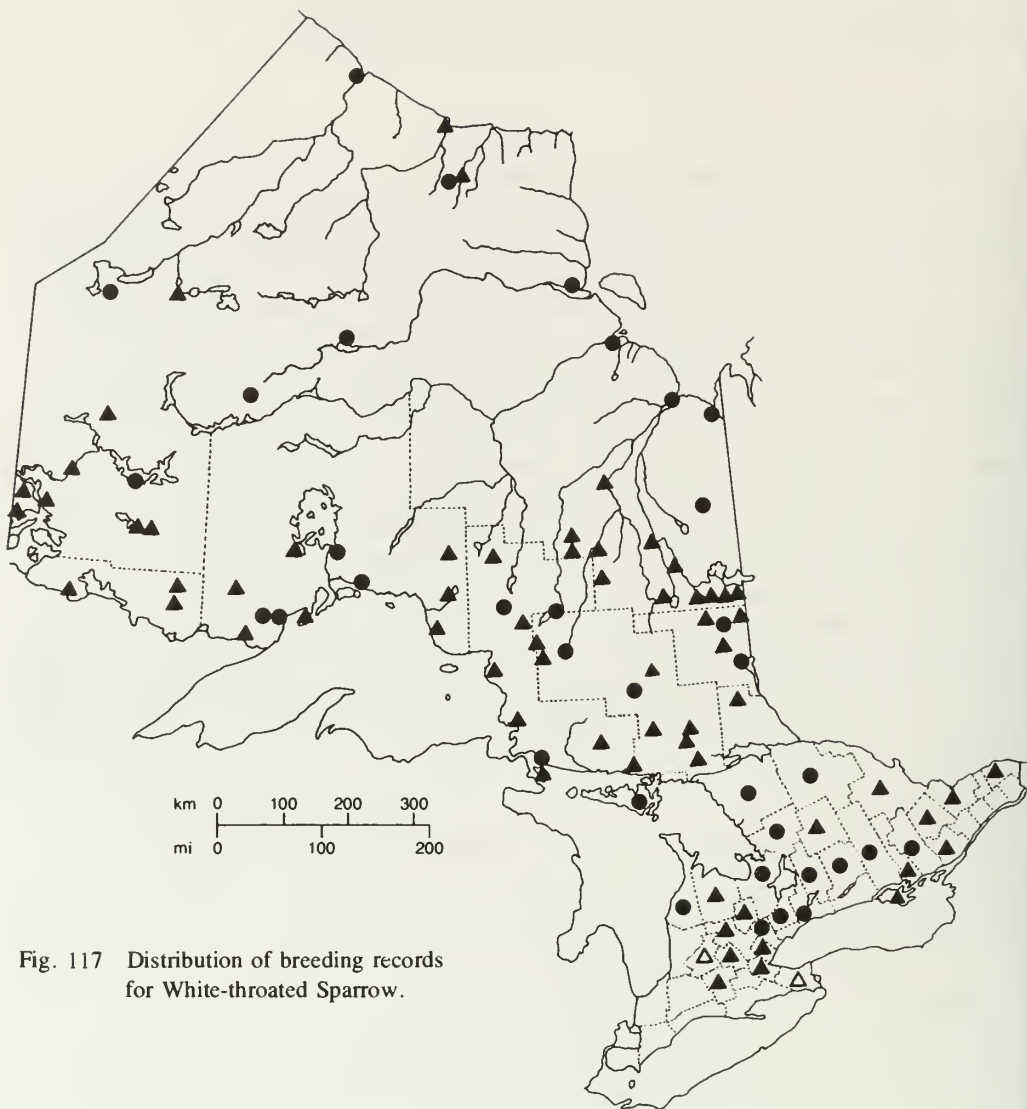


Fig. 117 Distribution of breeding records for White-throated Sparrow.

White-throated Sparrow, *Zonotrichia albicollis* (Gmelin)

Nidiology

RECORDS 416 nests representing 33 provincial regions.

Breeds in coniferous (69 nests), mixed (54 nests), deciduous (18 nests), and unspecified (50 nests) woodlands; in muskeg areas (29 nests); in overgrown fields and shrubby areas (14 nests); in cutover and burned woodlands (9 nests); in swamps and beaver meadows (7 nests); on rocky outcroppings (6 nests); and in bracken/blueberry barrens (3 nests).

Second-growth, open woodlands were much favoured over mature and dense tree stands, and woodland nests were most often located at edges, clearings, and lake/river shorelines, and

along roadsides and survey cuts. Dry as well as damp or wet habitats were selected without obvious preference.

Nests were far more often on or near the ground (270 nests) than elevated (29 nests) at low levels in shrubs, trees, and brush or fallen trees. Most ground nests were placed under low shrubs (commonly blueberry) and trees (145 nests), and were usually well concealed by grasses, bracken fern, and other plants; others were in grass clumps (58 nests); in moss with grasses and sedges (40 nests); in weedy plants and ferns (22 nests); in leaf litter (2 nests); under logs (2 nests); and under roots (1 nest). Some ground nests were described as somewhat sunken. Elevated nests were almost equally divided between deciduous shrubs and small coniferous trees, and heights of 28 nests ranged from 0.2 to 0.9 m (0.5 to 3 ft), with 14 averaging 0.2 to 0.5 m (0.7 to 1.5 ft). One unusual nest was found at a height of 2.4 m (8 ft) in a fallen cedar supported by another cedar. Nests of colour-banded males, and to a lesser extent females, were reported in the same general area in successive years. Renesting after nest failure also took place in the same general area. One nest was 1.5 m (5 ft) from the base of a Ruby-crowned Kinglet nest tree.

Nests were well-made cups with exteriors almost invariably formed of coarse and fine grasses with wood chips commonly included. Other outer materials were twigs, rootlets, conifer needles, mosses, plant stalks, bark strips, hair, leaves, and mud. Linings characteristically contained fine grasses, hair (of deer, moose, porcupine, and horse), and rootlets. Other lining materials were conifer needles, leaves, mosses, plant down, lichens (black), fine plant stalks, and small twigs. Some nests were reported to be composed entirely of grass. Outside diameters of 48 nests ranged from 7 to 14 cm (2.75 to 5.5 inches), with 24 averaging 10 to 11.4 cm (4 to 4.5 inches); inside diameters of 48 nests ranged from 4.4 to 10 cm (1.75 to 4 inches), with 24 averaging 6.4 to 7.6 cm (2.5 to 3 inches); outside depths of 44 nests ranged from 4.6 to 11.4 cm (1.8 to 4.5 inches), with 22 averaging 6.4 to 7.6 cm (2.5 to 3 inches); inside depths of 46 nests ranged from 2.5 to 6.4 cm (1 to 2.5 inches), with 23 averaging 3.8 to 5 cm (1.5 to 2 inches).

EGGS 288 nests with 1 to 6 eggs; 1E (4N), 2E (11N), 3E (36N), 4E (179N), 5E (57N), 6E (1N).

Average clutch range 4 eggs (179 nests).

Cowbird parasitism 390 nests with 24 parasitized (6.2%).

INCUBATION PERIOD 7 nests: 1 of at least 11 days, 4 of 12 days, 1 of at least 12 days, 1 of 13 days.

EGG DATES 310 nests, 18 May to 8 August (333 dates); 155 nests, 6 June to 27 June.

As suggested by the long period of egg dates, renestings after loss of the first nests were reported, and 1 pair renested twice. Double broods were reported. An attempted third brood was also reported (Loncke and Falls, 1973).

Breeding Distribution

The White-throated Sparrow was formerly considered to breed throughout Ontario. Today it is largely absent from the Deciduous Forest region and scarce in the remainder of the southern agricultural areas.

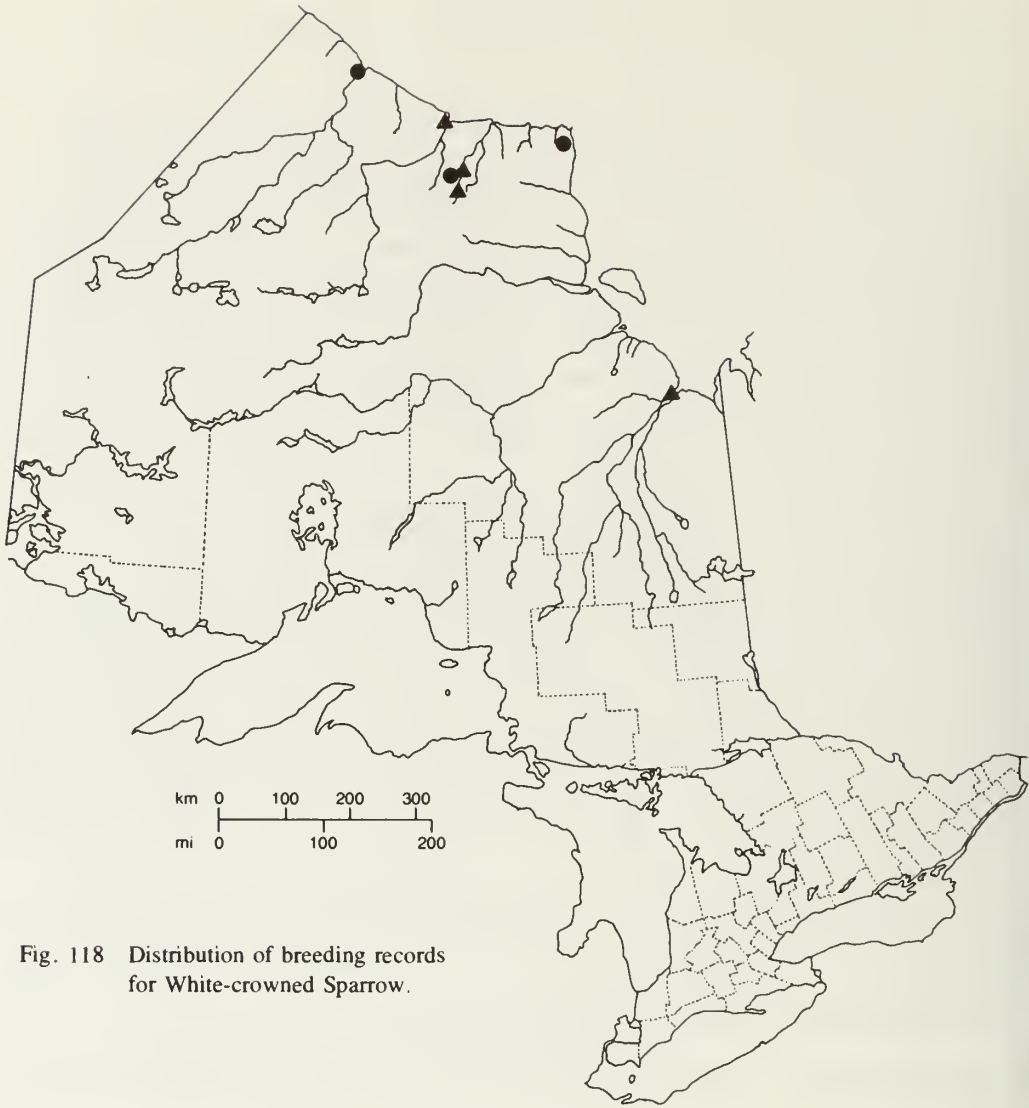


Fig. 118 Distribution of breeding records for White-crowned Sparrow.

White-crowned Sparrow, *Zonotrichia leucophrys* (Forster)

Nidiology

RECORDS 17 nests representing 2 provincial regions.

A breeding inhabitant of treeline and tundra regions, the White-crowned Sparrow nests in open stands of black spruce and tamarack in burns, bogs, and fens, often with associated stands of willow, poplar, and alder. In heath/lichen tundra, it nests both in the open and near growths of dwarf birch and willow (Fig. 147).

Nests were invariably on the ground and most were positioned at the bases of small willows, black spruce, tamarack, and Labrador tea, although some were in thick grass or lichen in the open. They were in well-concealed and often deep depressions in mossy hummocks, in grass and lichen clumps, and 1 nest was under a willow root. One nest depression in reindeer lichen was 15 cm (6 inches) in depth.

Nests were deeply cupped, sunken structures composed mainly of dead grasses, and occasionally twigs and mosses. They were characteristically lined with fine grasses, and sometimes also with rootlets, hair, and feathers. Outside diameters of 5 nests ranged from 8 to 18 cm (3.1 to 7.1 inches); inside diameters of 6 nests ranged from 6.5 to 7 cm (2.6 to 2.8 inches); inside depths of 6 nests ranged from 4 to 6 cm (1.6 to 2.4 inches).

EGGS 15 nests with 3 to 5 eggs; **3E** (1N), **4E** (6N), **5E** (8N).

Average clutch range 4 to 5 eggs (14 nests).

INCUBATION PERIOD 1 nest, at least 10 days.

EGG DATES 14 nests, 17 June to 24 July (21 dates); 7 nests, 25 June to 29 June.

Breeding Distribution

The early fur traders recorded the White-crowned Sparrow as a summer resident on our northern coasts and indicated that they thought it bred there (Forster, 1772). Baillie and Harrington (1937) list this species as a breeding bird of Ontario, but the references which they cite in support (Preble, 1902; Macoun and Macoun, 1909) in fact do not record breeding anywhere in the province. It appears, then, that the first documentation of breeding was not obtained until 1940 at Fort Severn, where 2 clutches of eggs were collected by C. E. Hope on 18 and 25 June (ROM 3908, 3909). Although subsequent documented breeding records have all been relatively near Hudson Bay, summer sightings suggest that White-crowned Sparrows summer all across the north as far south as Big Trout Lake and Fort Albany, and at least along the James Bay coast to Moosonee. A nest with eggs was reported from Moose Factory, Cochrane District, as long ago as 1930, but the identity is in question. However, nesting was established there in 1956 (Todd, 1963).

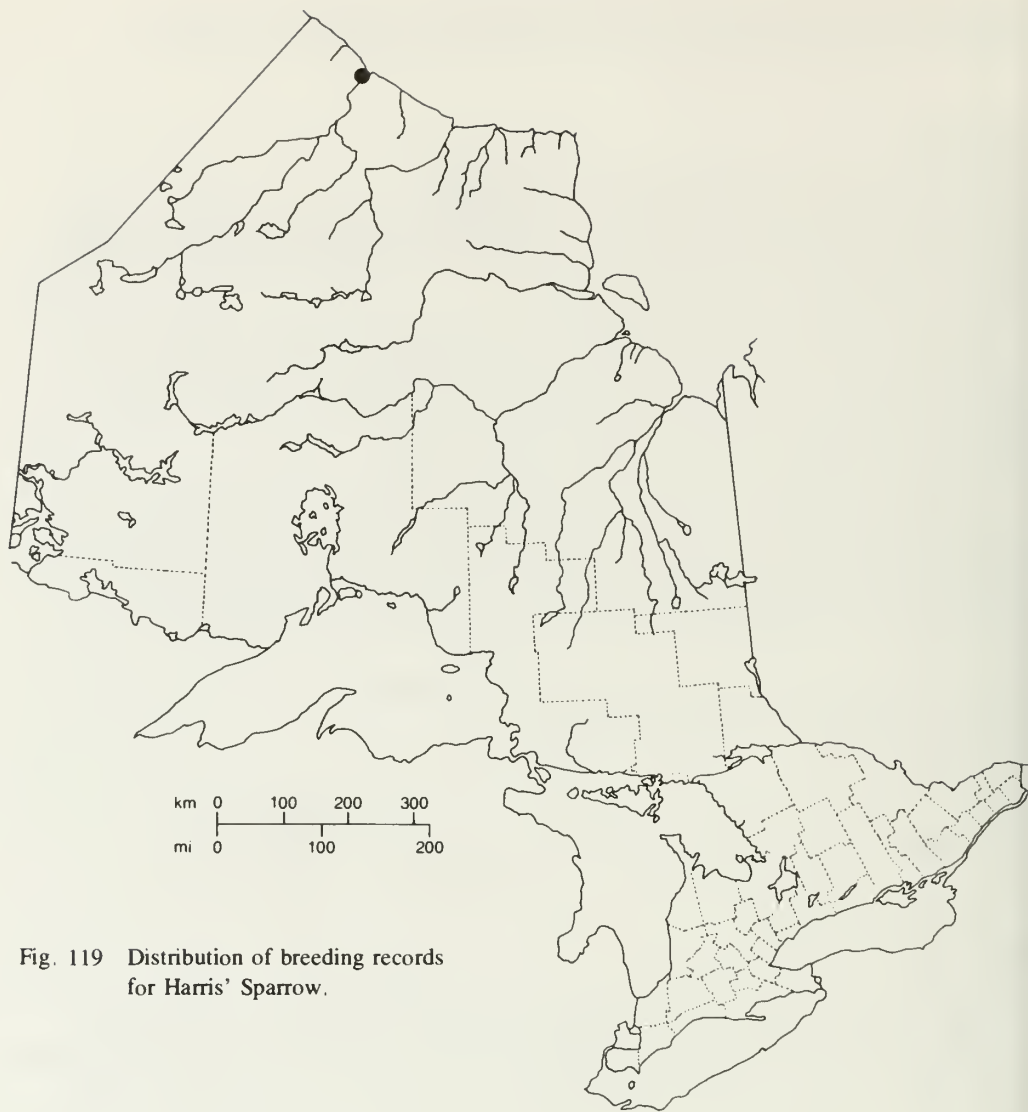


Fig. 119 Distribution of breeding records for Harris' Sparrow.

Harris' Sparrow, *Zonotrichia querula* (Nuttall)

Nidiology

RECORDS 1 nest representing 1 provincial region.

Only 1 nest of this northern-breeding sparrow has been found in Ontario. This nest was discovered at Fort Severn, Kenora District, on 5 July 1983. The habitat was a coastal fen, consisting of small tamaracks near a wet area, and was at a clearing near an airstrip. The nest was on the ground at the base of Labrador tea and a small tamarack.

The nest exterior and lining were both composed of dried grasses. It was cup-shaped, and had an outside diameter of 7.6 cm (3 inches) and an inside depth of 3.2 cm (1.25 inches).

The nest contained 4 eggs when found.

Breeding Distribution

In view of the regular breeding of Harris' Sparrow (Fig. 150B) at Churchill, Manitoba, the recent discovery of its nesting in Ontario's treeline region (Fig. 149) was not completely unexpected. It probably breeds from the Manitoba border east at least to Fort Severn, and relatively close to the Hudson Bay coast.



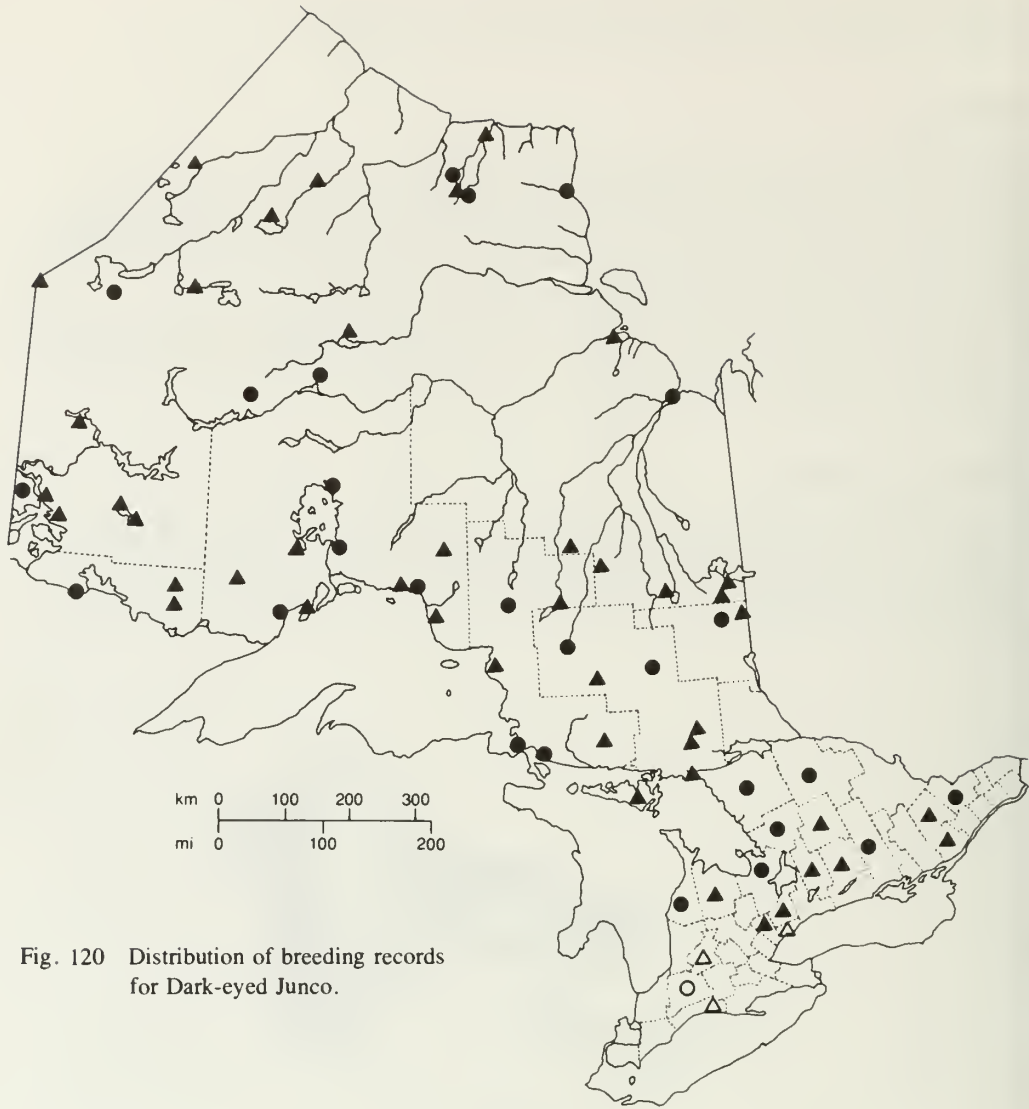


Fig. 120 Distribution of breeding records for Dark-eyed Junco.

Dark-eyed Junco, *Junco hyemalis* (Linnaeus)

Nidiology

RECORDS 158 nests representing 24 provincial regions.

Breeds in wooded areas, with coniferous (40 nests) preferred to mixed (17 nests) and deciduous (2 nests) stands. Burns and cutover areas were sometimes selected (9 nests). Other breeding habitats were bare or sparsely treed, rocky outcrops (19 nests); wooded park and cottage areas (6 nests); residential gardens (4 nests); open grass areas (2 nests); and a golf course (1 nest).

Wooded areas were usually semi-open, or nests were at the edges or in clearings. A

number of nests (24) were at road and railway edges, near paths and shorelines, and in ditches; such sites appeared to indicate a preference for open areas near the nest. Nest areas were more often dry than wet, and a significant number of nests were on slopes, embankments, and vertical rock faces.

Most nests were on the ground; they were often well hidden in depressions in the ground, in hollows in moss, in rock crevices, and in various other cavities. Fourteen elevated nests were reported, 9 of which were situated in crevices on cliff faces, and the remaining 5 in a cedar tree, a Labrador tea shrub, a hanging flower-basket, a 15-cm (6 inch) cavity in a boulder, and a depression in a stump. Heights of 9 nests ranged from 0.2 to 1.7 m (0.5 to 5.5 ft), and 2 nests on cliff faces were 3 and 9 m (10 and 30 ft) above water. Ground nests were characteristically under shrubs, vines, and trees (42 nests); in or under grass clumps, ferns, and other plants (33 nests); in moss and lichen hummocks (26 nests); beside or under branches, fallen logs, fence rails, and stumps (19 nests); under earthen bank overhangs (12 nests); under rocks (10 nests); in rock crevices (7 nests); beside buildings and walls (2 nests); in the end of a hollow log (1 nest); under a metal barrel (1 nest); and in a vole tunnel (1 nest).

Because nests were often positioned in existing hollows, crevices, and other cavities, their shapes varied. Some nests were domed-over with vegetation. Nests were described as well-built, woven cups of varying depth. Exteriors were usually composed of coarse grasses, and sometimes of plant stalks and fibres, mosses, wood pieces and twigs, burned peat, roots, bark, leaves, and lichens. Linings were characteristically of fine grasses and hair, and less often of rootlets, lichens, feathers, fine plant stalks and fibres, pine needles, mosses, and leaves. Outside diameters of 5 nests ranged from 7.6 to 16.5 cm (3 to 6.5 inches); inside diameters of 11 nests ranged from 4 to 12 cm (1.6 to 4.7 inches); outside depths of 3 nests ranged from 3.2 to 8.9 cm (1.3 to 3.5 inches); inside depths of 11 nests ranged from 2 to 6.4 cm (0.8 to 2.5 inches).

EGGS 142 nests with 1 to 7 eggs; 1E (2N), 2E (3N), 3E (24N), 4E (87N), 5E (23N), 6E (2N), 7E (1N).

Average clutch range 4 eggs (87 nests).

Eggs were laid at daily intervals; renestings were reported.

Cowbird parasitism 153 nests with 7 parasitized (4.6%).

INCUBATION PERIOD 5 nests: 2 of 11 days, 2 of at least 11 days, 1 of ca 12 days.

Estimates were made with the assumption that incubation commenced with the laying of the penultimate egg.

EGG DATES 110 nests, 18 April to 26 July (126 dates); 55 nests, 2 June to 1 July.

A nest containing young that were estimated to be 3 to 5 days old was found on 19 August, indicating a much later egg date than the above extreme. Second broods were reported.

Breeding Distribution

At one time the Dark-eyed Junco probably nested throughout Ontario, but with the increasing settlement of agricultural areas it has retreated northwards. Today it breeds throughout northern Ontario, but in southern Ontario it is regularly found only in a few of the most northerly districts. It is occasionally found nesting as far south as Bruce County, Peel RM, and Leeds County.

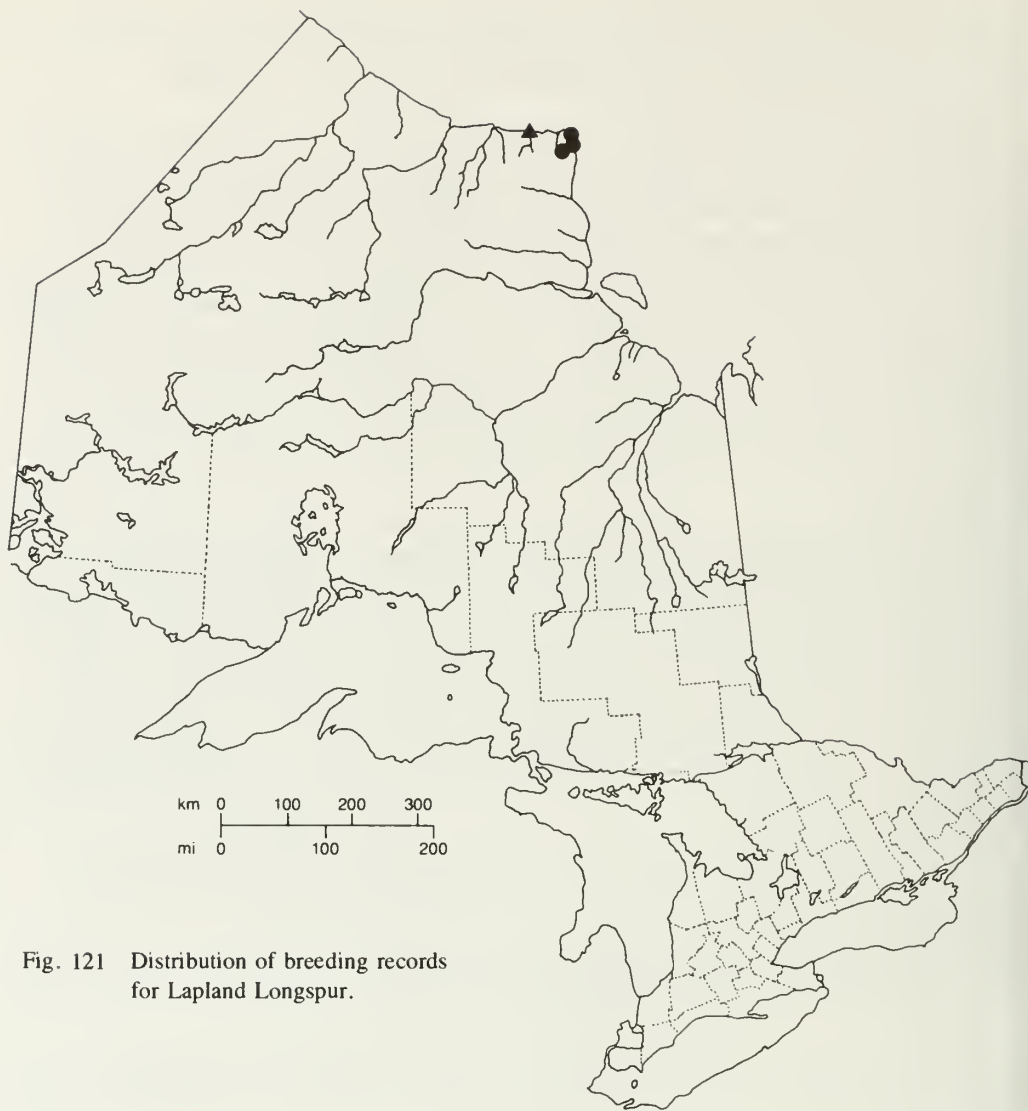


Fig. 121 Distribution of breeding records for Lapland Longspur.

Lapland Longspur, *Calcarius lapponicus* (Linnaeus)

Nidiology

RECORDS 12 nests representing 1 provincial region.

Breeds on open, treeless tundra. The 12 known nests were all found in similar habitat within 40 km (25 mi) of Cape Henrietta Maria, Kenora District. The tundra areas were usually dry and covered with a heath/lichen community, moss, grass, and the occasional arctic willow (Fig. 143). One nest was in wet, graminoid tundra.

Nests (Fig. 144B) were depressions in lichen, moss, and sedge hummocks, and 1 was near a clump of arctic willow.

All nests were woven cups of dead grass lined with feathers of Willow Ptarmigan and other species, and grasses. The outside diameter of 1 nest was 9 cm (3.5 inches); inside diameters of 2 nests were 7 and 9 cm (2.8 and 3.5 inches); inside depths of 2 nests were 5 and 5 cm (2 inches).

EGGS 9 nests with 3 to 6 eggs; 3E (3N), 4E (2N), 5E (3N), 6E (1N).

INCUBATION PERIOD 1 nest, 11 days.

EGG DATES 8 nests, 17 June to 21 July (12 dates).

Breeding Distribution

Breeding by the Lapland Longspur in Ontario was first confirmed in 1947 at Cape Henrietta Maria (Manning, 1952). All additional records have also come from the Cape region where the species is relatively common in summer (Baillie, 1962). It probably breeds along the Hudson Bay coast at least as far west as the Sutton River (Manning, 1952), but it does not appear to occupy tundra areas along the entire coast.



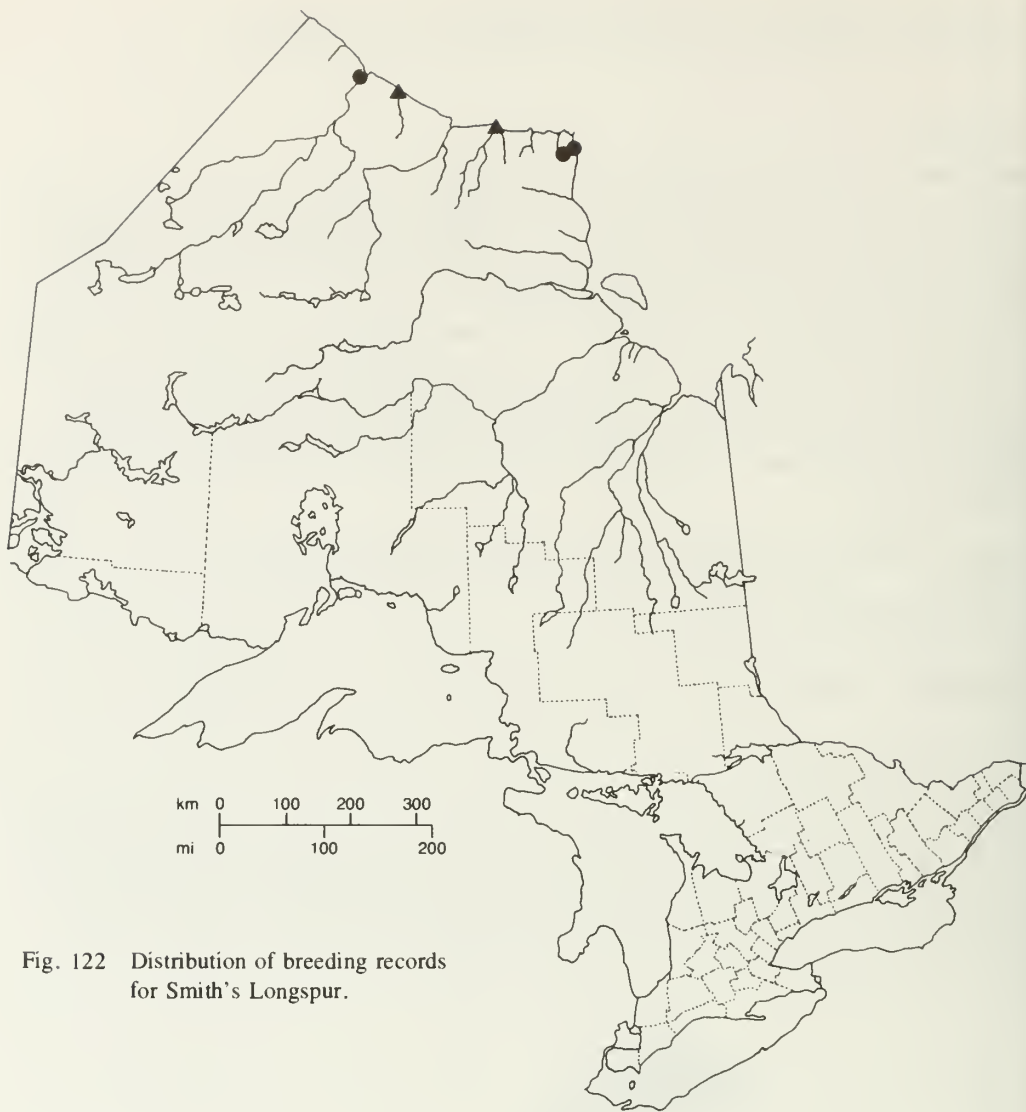


Fig. 122 Distribution of breeding records for Smith's Longspur.

Smith's Longspur, *Calcarius pictus* (Swainson)

Nidiology

RECORDS 14 nests representing 1 provincial region.

Breeds on open, treeless tundra. The few recorded nests suggested that this species preferred a grassy, somewhat wetter tussock tundra (Fig. 145) for its breeding habitat, in contrast to the dry heath-lichen areas selected by the Lapland Longspur. However, 3 nests were reported on raised, dry tundra areas and beach ridges.

Nests were positioned on the ground in sedges and grasses, both long and short, and sometimes with mosses and lichens near the nest. One nest was in a clump of rhododendron, another under a small dwarf birch, a third was well hidden in long, dead grass clumps, and a fourth was on a hummock.

Nests (Fig. 146B) were woven, sunken cups with coarse, dead grasses on their exterior, and were lined with fine grasses, feathers, and a few fine rootlets. One nest had a small grass ramp leading to it. Outside diameters of 5 nests ranged from 7 to 11.4 cm (2.8 to 4.5 inches); inside diameters of 7 nests ranged from 6 to 7 cm (2.4 to 2.8 inches); inside depths of 7 nests ranged from 3.5 to 6.4 cm (1.4 to 2.5 inches).

EGGS 8 nests with 3 to 5 eggs; 3E (1N), 4E (3N), 5E (4N).

Average clutch range 4 to 5 eggs (7 nests).

Three other nests each had 4 young, 2 others each contained 2 young, and a sixth contained 5 young.

INCUBATION PERIOD No information.

EGG DATES 8 nests, 22 June to 14 July (11 dates); 4 nests, 30 June to 2 July.

Breeding Distribution

The first breeding record for Smith's Longspur (Fig. 146A) in Ontario was secured at Fort Severn in June 1940 (Baillie, 1961). Most subsequent records were from the Cape Henrietta Maria region far to the east, but 2 additional breeding records (Shagamu River, Little Cape) suggest that this species may breed all along the Hudson Bay coast where tundra conditions prevail.



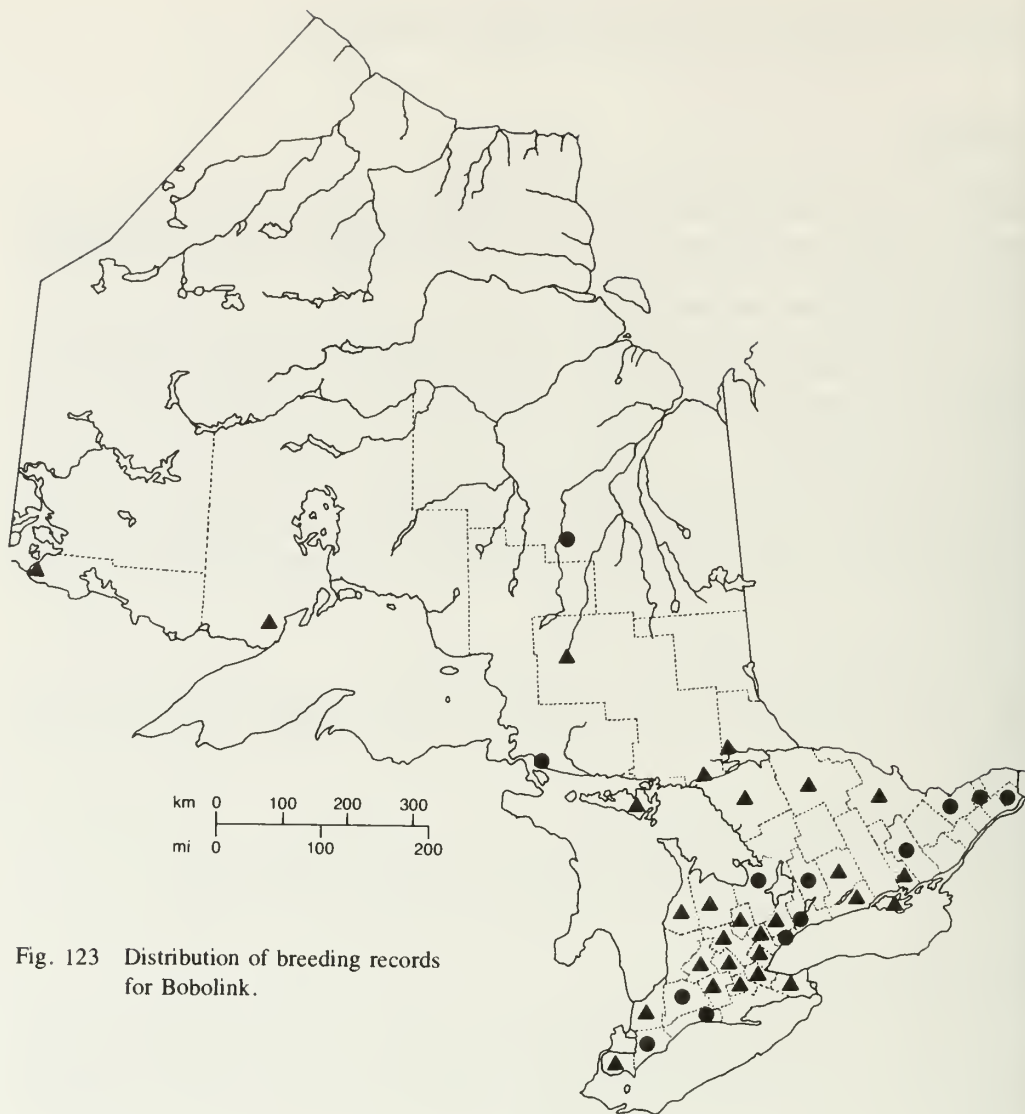


Fig. 123 Distribution of breeding records for Bobolink.

Bobolink, *Dolichonyx oryzivorus* (Linnaeus)

Nidiology

RECORDS 140 nests representing 36 provincial regions.

Breeds invariably in open field areas (Fig. 187): hay fields (41 nests); shrubby and weedy fields (41 nests); pastures (18 nests); low, marshy fields (14 nests); and a stubble field (1 nest).

Nests were almost always on the ground (91 nests), but 2 were elevated to a height of 15 cm (6 inches) in supporting grass stems, and a third was 30 cm (12 inches) high in purple vetch. They were usually very well concealed under grasses, weeds, and sometimes shrubs, and were woven into surrounding grass and plant stalks. Thirteen nests were noted to be in shallow depressions. Three unconcealed nests were reported.

Nests were woven, shallow cups, and 1 nest was described as frail. Exteriors were composed of grasses, plant stalks and fibres, and rootlets. Linings were of fine grasses, and horse hair was reported in 1 nest. Outside diameters of 9 nests ranged from 9 to 11 cm (3.5 to 4.3 inches); inside diameters of 8 nests ranged from 5.5 to 7.5 cm (2.2 to 3 inches); outside depths of 7 nests ranged from 4 to 5 cm (1.6 to 2 inches); inside depths of 7 nests ranged from 2.5 to 4 cm (1 to 1.6 inches).

EGGS 95 nests with 1 to 7 eggs; 1E (1N), 2E (3N), 3E (2N), **4E** (21N), **5E** (45N), **6E** (22N), **7E** (1N).

Average clutch range 4 to 6 eggs (88 nests).

Cowbird parasitism 136 nests with 8 parasitized (5.9%).

INCUBATION PERIOD 1 nest, ca 11 days.

EGG DATES 102 nests, 19 May to 16 July (107 dates); 51 nests, 2 June to 12 July.

Breeding Distribution

The Bobolink (Fig. 188A) breeds throughout southern Ontario, and in the north as far as Kenora and Kapuskasing, in areas where forests have been cleared.



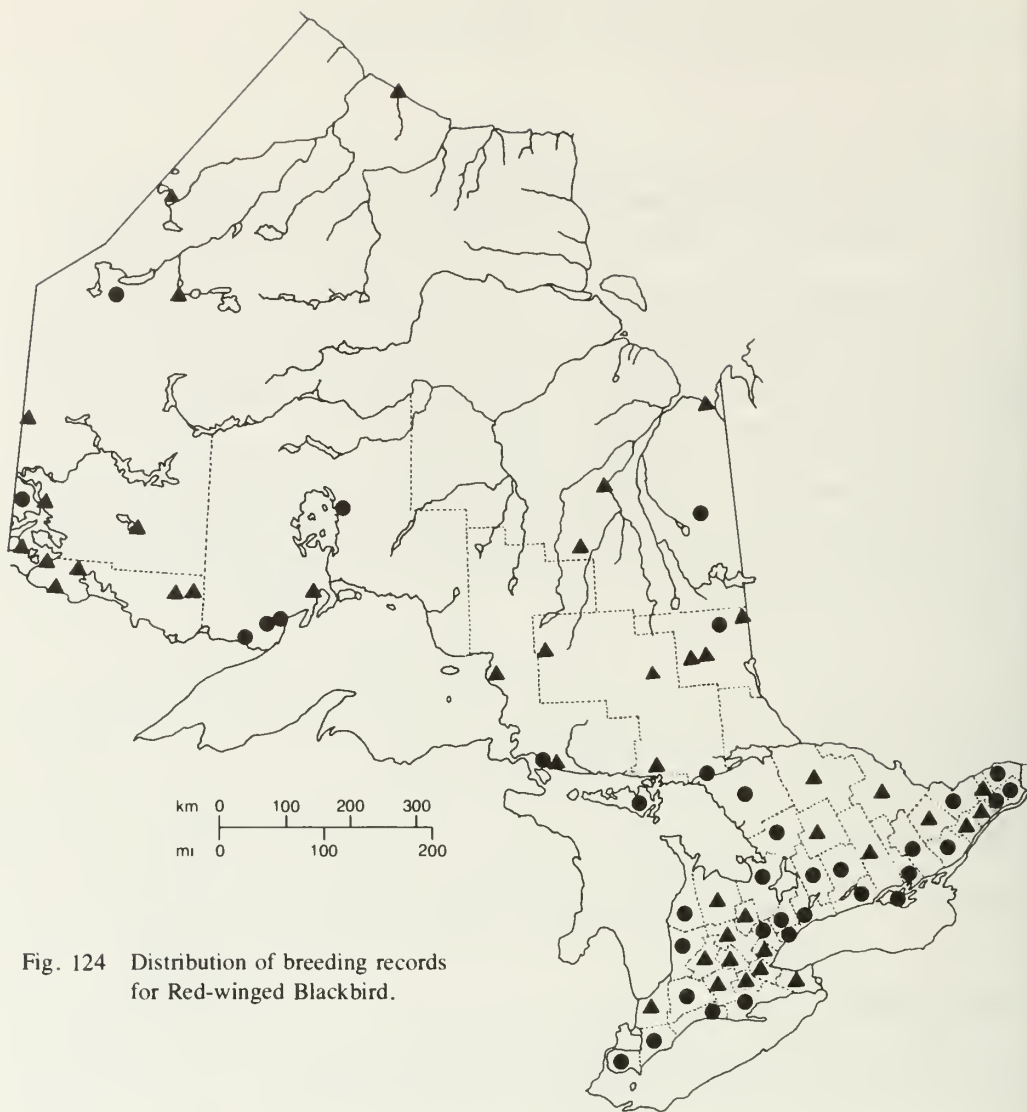


Fig. 124 Distribution of breeding records for Red-winged Blackbird.

Red-winged Blackbird, *Agelaius phoeniceus* (Linnaeus)

Nidiology

RECORDS 6797 (ca 10 128 nests) representing all 52 provincial regions. Breeds in loose colonies and sometimes singly. The average size of 66 colonies (1425 nests), all in cattail marshes, was 22 nests.

Based on a selection of 588 records, breeding habitats were in freshwater marshes (185 records); in rural areas, including fields, abandoned pastures, river flood plains, and gravel pits (153 records); in wooded areas, including plantations and orchards (95 records); in roadside ditches and railroad right-of-ways, and at lake/river shorelines (48 records); in wooded swamps and beaver ponds (40 records); in bogs and fens (24 records); in gardens and

parks (21 records); on rocky islands (12 records); and in sand-dune areas (10 records). Most marsh habitats were homogeneous cattail stands (167 records; Fig. 199), and a few were mixed shrub/cattail (9 records), sedge (3 records), rush (2 records), reed grass (2 records), and mixed marsh vegetation stands (2 records). Wooded habitats were usually open and nests were at edges or in clearings, with most in deciduous stands (62 records), some in coniferous stands and plantations (26 records), and a few in mixed stands (7 records). Field areas were usually open, but occasionally had some shrub growth. More nests were in wet (339 records) than in dry (250 records) areas.

Based on 345 records, nests were most often positioned at low levels in dead and living cattails/grasses/sedges/rushes/other non-woody plants (201 records) over water or land; sometimes at various heights in shrubs, trees, and vines (133 records); and occasionally on or very near the ground (11 records). One nest was in a deep cavity in an elm tree, another was supported in a fence and among cattails, and 2 others were on top of stumps in water.

Nests were recorded in 27 species of non-woody plants (Fig. 202A); in 37 species of deciduous shrubs, trees, and vines (Fig. 202B); and in 6 species of coniferous trees and shrubs. Based on 580 records, the supporting growths most commonly selected were dominated by cattails (131 records), but also included willow spp. (51 records), grass spp. (40 records), hawthorn spp. (24 records), pine spp. (16 records), dogwood spp. (16 records), spiraea spp. (15 records), white cedar (15 records), goldenrod spp. (14 records), and maple spp. (14 records). Most nests were attached or woven to several upright stalks or branches of plants, shrubs, and trees; some were in forks or crotches; others were suspended from branches and stalks; and a few were on horizontal limbs. Ground nests were in clumps of vegetation and 2 were reported at the bases of trees and shrubs. Nests were usually hidden, although 5 were reported to be exposed. One nest of Red-winged Blackbird was 1.2 m (4 ft) distant from another and the same distance from a nest of Yellow Warbler. Two nests of this species were both in the same cattail clump, and nestings were recorded in colonies of Brewer's and Yellow-headed blackbirds. One nest was in the same pine tree as a nest of Common Grackle, another nest was near a nest of Eastern Meadowlark, and a third was in a tree under which a Mallard was incubating. Heights of 241 nests in cattails and other non-woody plants ranged from 0.1 to 1.4 m (0.3 to 4.5 ft), with 121 averaging 0.3 to 0.6 m (1 to 2 ft). Heights of 296 nests in shrubs and trees ranged from 0.2 to 11.6 m (0.5 to 38 ft), with 148 averaging 0.8 to 1.8 m (2.5 to 6 ft).

Nests were woven, cup-shaped structures which were sometimes described as bulky. Exteriors were characteristically composed of grasses, and less often of cattail pieces, plant stalks and fibres, leaves, paper/plastic/cellophane/cloth, twigs, mud, string, plant down, bark, feathers, algae, mosses, rootlets, and wool. Linings were usually of fine grasses and less often of plant fibres, rootlets, pine needles, hair, bark strips, plant down, and feathers. One nest was built on top of an old nest of this species, another incorporated part of an old nest of Northern Oriole, and a third contained a snake skin in its exterior. Ten nests had outside diameters ranging from 11 to 14 cm (4.3 to 5.5 inches), inside diameters from 6 to 7.5 cm (2.4 to 3 inches), outside depths from 8 to 20 cm (3.1 to 8 inches), and inside depths from 5 to 6.5 cm (2 to 2.6 inches).

EGGS 644 nests with 1 to 7 eggs; 1E (39N), 2E (75N), 3E (150N), 4E (328N), 5E (48N), 6E (3N), 7E (1N).

Average clutch range 4 eggs (328 nests).

The 7-egg clutch was assumed to be from 2 females since 2 distinct egg colour patterns were evident. At least 5 of the 2-egg clutches were known to be incubated and to have produced young. Eggs were usually laid at 1-day intervals.

Cowbird parasitism 6027 nests with 163 parasitized (2.4%).

In 1 nest cowbird eggs were buried.

INCUBATION PERIOD 28 nests, 10 to 13 days: 2 of 10 days, 1 of ca 10 days, 8 of 11 days, 6 of ca 11 days, 2 of at least 11 days, 5 of 12 days, 3 of at least 12 days, 1 of ca 13 days. Hatching times of 2 and even 3 days were reported, although 1 day or less was more usual.

EGG DATES 641 nests, 25 April to 3 August (782 dates); 320 nests, 26 May to 13 June. Renestings were reported and some of the replacement clutches were laid in the same nest as the original clutch. Double broods were reported.

Breeding Distribution

The Red-winged Blackbird (Fig. 201) breeds throughout southern Ontario. Although habitat is more limited, it also nests across the north, seldom farther than Favourable Lake and Moosonee, but at least once as far as Hudson Bay.

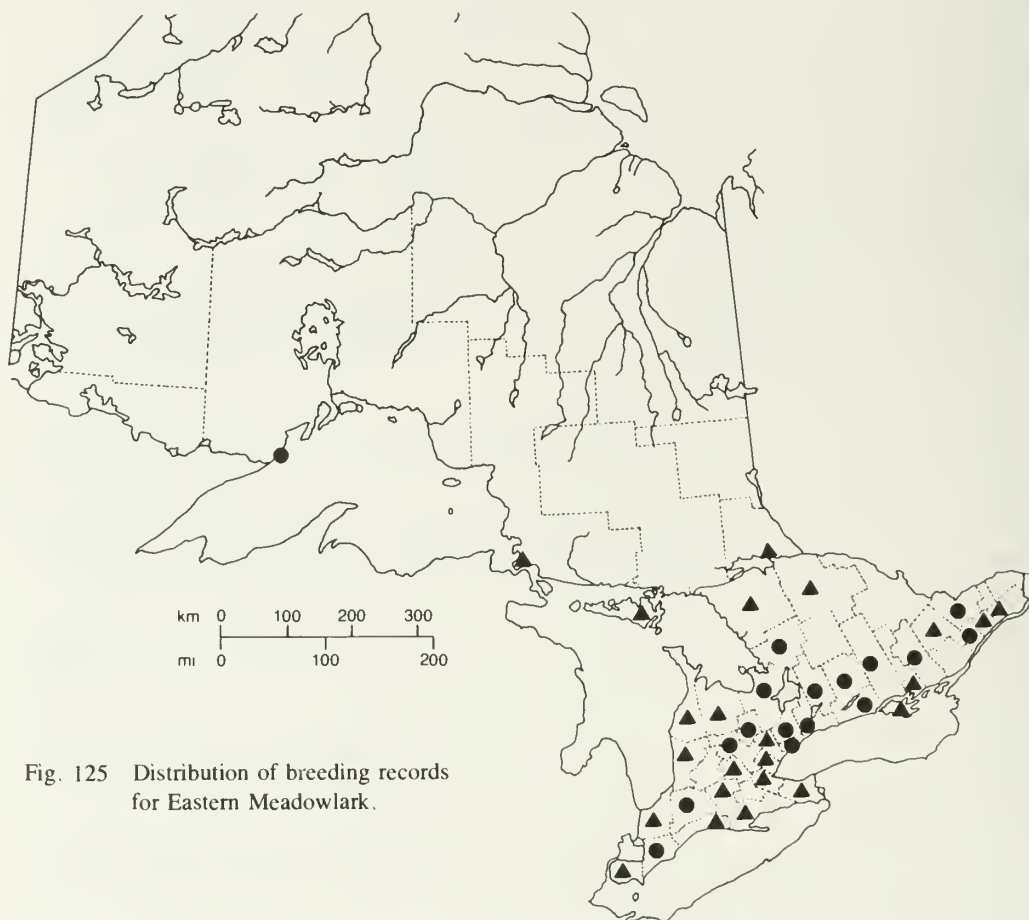


Fig. 125 Distribution of breeding records for Eastern Meadowlark.

Eastern Meadowlark, *Sturnella magna* (Linnaeus)

Nidiology

RECORDS 383 nests representing 38 provincial regions.

Breeds in open grassy fields (Fig. 185), pastures, and occasionally golf courses (144 nests); in shrubby and overgrown grassy fields, partially wooded city ravines and parks, young conifer plantations, and orchards (80 nests); in treed sand-dune areas (11 nests); and on road allowances (1 nest). Tall-grass growths were preferred to short grass, and dry areas selected more often than wet.

Nests were always on the ground and usually hidden in or under grass clumps (120 nests), sometimes under other plant clumps (7 nests), and occasionally at the bases of shrubs and small trees (4 nests). Four nests were placed under pine branches and weeds, under manure and straw, under a piece of linoleum, and under a mound of sod, respectively. One nest was within a metre (3 ft) of road asphalt. Nests were often reported to be in depressions in the ground. One nest was within 1.2 m (4 ft) of a Killdeer's nest, another was 4.5 m (15 ft) from a nest of Field Sparrow, and a third was near a nest of Upland Sandpiper.

Nests were woven cups, almost invariably domed or canopied (3 nests were not domed), and with the nest entrance on 1 side. Many nests had runways or tunnels of vegetation leading to their entrances, and the lengths of 5 of these ranged from 14 to 51 cm (5.5 to 20 inches). Exterior nest materials were usually grasses, and sometimes other plant stalks (weeds, sedges, and legumes), leaves, hair, and pine needles. Linings were characteristically of fine grasses, and occasionally of plant down, other plant stalks, and feathers. Nine nests had outside diameters (front to back) ranging from 14 to 20 cm (5.5 to 7.9 inches), inside diameters from 8 to 15 cm (3.1 to 5.9 inches), outside depths from 5 to 10 cm (2 to 4 inches), and inside depths from 5 to 7 cm (2 to 2.8 inches).

EGGS 317 nests with 1 to 8 eggs; 1E (5N), 2E (11N), 3E (23N), 4E (119N), 5E (135N), 6E (23N), 8E (1N).

Average clutch range 4 to 5 eggs (254 nests).

Cowbird parasitism 370 nests with 9 parasitized (2.4%).

INCUBATION PERIOD 2 nests: 1 of 12 days, 1 of 13 days.

EGG DATES 322 nests, 2 May to 3 August (350 dates); 161 nests, 22 May to 11 June.

Double broods seemed highly probable in this species. At 1 nest hybridization with Western Meadowlark was reported.

Breeding Distribution

The Eastern Meadowlark breeds throughout southern Ontario. In the north it is found breeding in only a few places such as near Thunder Bay and from Sault Ste Marie to Sudbury. It is apparently absent from Kenora and Rainy River districts.

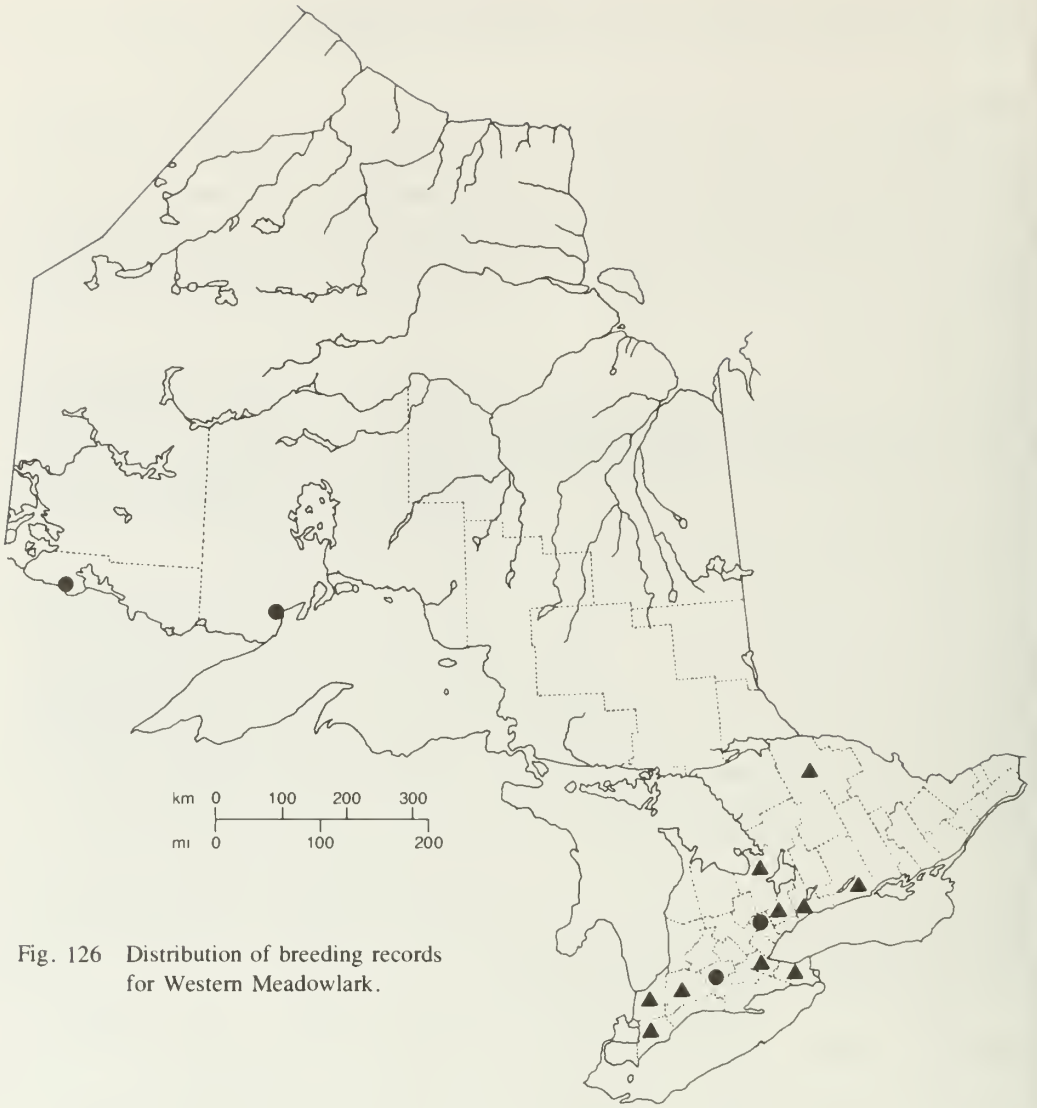


Fig. 126 Distribution of breeding records for Western Meadowlark.

Western Meadowlark, *Sturnella neglecta* Audubon

Nidiology

RECORDS 9 nests representing 9 provincial regions.

Breeds in grass and hay fields, both cultivated and uncultivated. One nest was in an orchard.

Nests were on the ground, hidden under grasses and other vegetation. Nest entrances were domed over to create a tunnel to the nest rim, and nest structures were loose cups of grasses and plant stems, lined with fine grasses.

No collected nests were available for examination.

EGGS 8 nests with 3 to 5 eggs; 3E (1N), 4E (4N), 5E (3N).

Average clutch range 4 to 5 eggs (7 nests).

INCUBATION PERIOD No information.

Second broods were noted in this species, and hybridization with Eastern Meadowlark was reported at 1 nest.

EGG DATES 3 nests, 16 May to 3 July (4 dates).

Breeding Distribution

The Western Meadowlark has moved into Ontario as a breeding bird only in this century. It is now found regularly in the southern part of Kenora District, in Rainy River District where it was first noted breeding in 1929 (Snyder, 1938), and east to the Thunder Bay area where nesting was confirmed in 1935 (Dear, 1940). East of Lake Superior in northern Ontario it is much more local and irregular in occurrence. Although nesting has yet to be confirmed, it was in the Sault Ste Marie to Sudbury area by the early 1920s (Snyder, 1942). In southern Ontario the first summering was reported in 1935 and the first breeding record was secured in 1947 (Baillie, 1960). It is to be found nesting today mainly in the agricultural areas south and west of the Canadian Shield and it summers on Manitoulin Island, but it does not seem to have nested yet in the agricultural areas of southeastern Ontario.



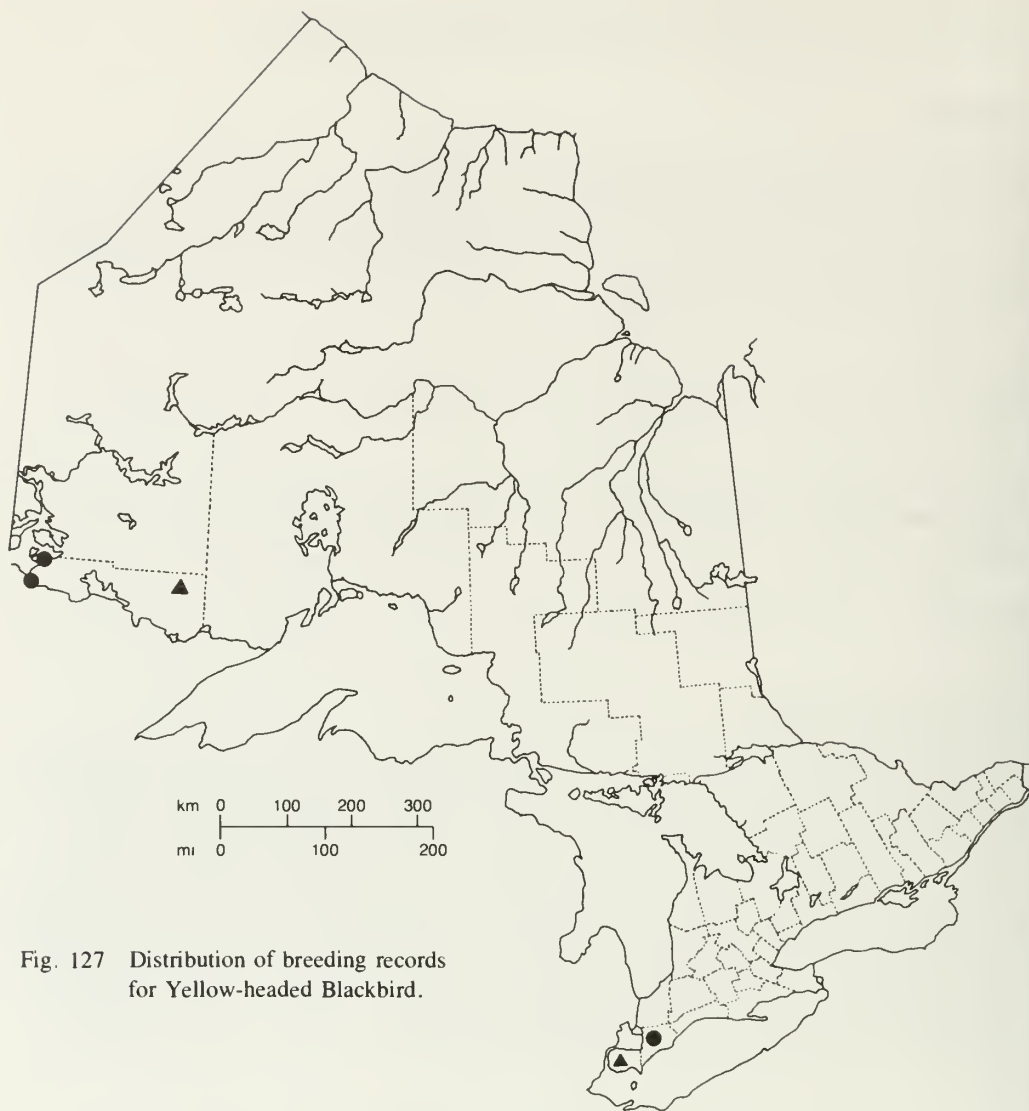


Fig. 127 Distribution of breeding records for Yellow-headed Blackbird.

Yellow-headed Blackbird, *Xanthocephalus xanthocephalus* (Bonaparte)

Nidiology

RECORDS 38 (12 colonies, 50 nests) representing 3 provincial regions.

A colonial species, this western icterid breeds in large and small cattail, bulrush, and reed grass marshes of lakes and rivers (Fig. 199). Most breeding sites were reused annually. One colony was noted to contain 20 nests, and 2 others as few as 2 and 3 nests.

Nests were over water and were situated in standing marsh vegetation of cattails, bulrush, and reed grasses. The supporting vegetation was often dead growth of the previous year, but sometimes was living material or a combination of the two. In 2 colonies, nests were noted to be 9 to 10 m (30 to 33 ft) apart. Heights of 38 nests ranged from 0.2 to 1 m (0.5 to 3.3 ft), with 19 averaging 0.3 to 0.7 m (1 to 2.25 ft).

Nests (Fig. 200B) were deep-bowled, woven cups of dried cattails, reed grasses, and other grasses. They were lined with finer strips of the same material. They were securely supported by adjacent standing stalks of vegetation. Four nests had outside diameters ranging from 13 to 14 cm (5.1 to 5.5 inches), inside diameters from 6 to 7 cm (2.4 to 2.8 inches), outside depths from 16 to 25 cm (6.3 to 9.8 inches), and inside depths from 6 to 8 cm (2.4 to 3.1 inches).

EGGS 29 nests with 1 to 5 eggs; 1E (3N), 3E (7N), 4E (17N), 5E (2N).

Average clutch range 4 eggs (17 nests).

INCUBATION PERIOD 1 nest, ca 11 days.

EGG DATES 26 nests, 30 May to 1 July (34 dates); 13 nests, 7 June to 19 June.

Breeding Distribution

The first nesting of the Yellow-headed Blackbird (Fig. 200A) in Ontario was not confirmed until 1961, although it was probably breeding here as early as 1931 (Denis, 1958; Baillie, 1961). But, even today, it nests only locally and in very small numbers. It is known to nest regularly only in Rainy River District in the northwest, and in Kent County in the south.



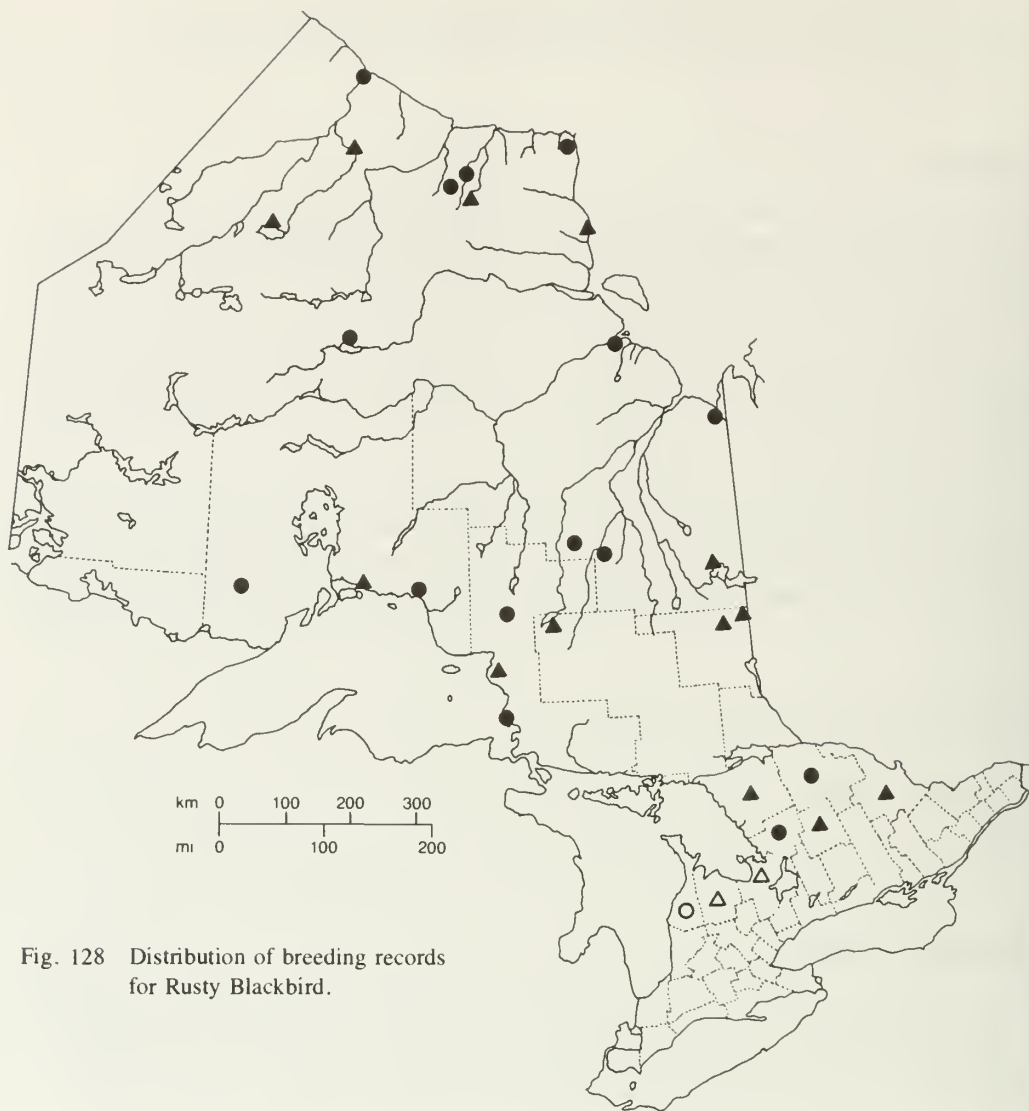


Fig. 128 Distribution of breeding records for Rusty Blackbird.

Rusty Blackbird, *Euphagus carolinus* (Müller)

Nidiology

RECORDS 36 nests representing 14 provincial regions.

Breeds near edges or at openings of wooded areas (19 nests), as well as in open areas (11 nests), and in both situations almost always near water (lakes, rivers and creeks, swamps, bogs and fens, and beaver ponds). Wooded areas were coniferous (11 nests), mixed (7 nests), and unspecified (1 nest) tree stands. Open areas were bogs and fens (6 nests), lake and creek shorelines (3 nests), an old beaver meadow (1 nest), and a field near a highway (1 nest).

Nests were located near or often over water, and were almost always elevated in living (24 nests) and dead (6 nests) trees and shrubs. One nest in Cochrane District was situated on the ground (ROM 7273). Another nest was in a fallen dead spruce over water, and a third was placed within a hollow trunk standing in water. Coniferous trees (3 spp., 22 nests) were preferred to deciduous trees and shrubs (4 spp., 6 nests), and those most commonly selected were spruce spp. (19 nests), willow spp. (3 nests), and balsam fir (2 nests).

Nests were positioned most often against the trunk on horizontal branches and in forks. Two nests were noted to be near the base of the tree, and a third was on branches between the trunks of 2 small spruces. Heights of 29 nests ranged from 0.3 to 2.7 m (1 to 9 ft), with 15 averaging 0.8 to 1.8 m (2.5 to 6 ft).

Nests were bulky, well-constructed cups, with rough, untidy exteriors composed of twigs, grasses, mud, lichens, plant stalks, and roots. Linings were characteristically of fine grasses, with the occasional addition of rootlets and pine needles. Eight nests had outside diameters ranging from 13 to 18 cm (5.1 to 7.1 inches), inside diameters from 7.5 to 10 cm (3 to 3.9 inches), outside depths from 7.5 to 21.5 cm (3 to 8.5 inches), and inside depths from 4 to 7 cm (1.6 to 2.8 inches).

EGGS 24 nests with 1 to 5 eggs; 1E (1N), 2E (1N), 3E (5N), 4E (12N), 5E (5N).

Average clutch range 4 eggs (12 nests).

INCUBATION PERIOD No information.

EGG DATES 12 nests, 4 May to 22 June (13 dates); 6 nests, 28 May to 10 June.

A nest containing half-grown young on 11 July in the Cape Henrietta Maria region indicated a later egg date than the latest above, as did a historical record of a nest with eggs in Grey County found in early July.

Breeding Distribution

The Rusty Blackbird (Fig. 155) breeds throughout northern Ontario, but ranges into southern Ontario only as far as Muskoka DM and Haliburton County at the present time. It undoubtedly bred farther south in the past, as indicated by historical reports from Bruce, Grey, and Simcoe counties.

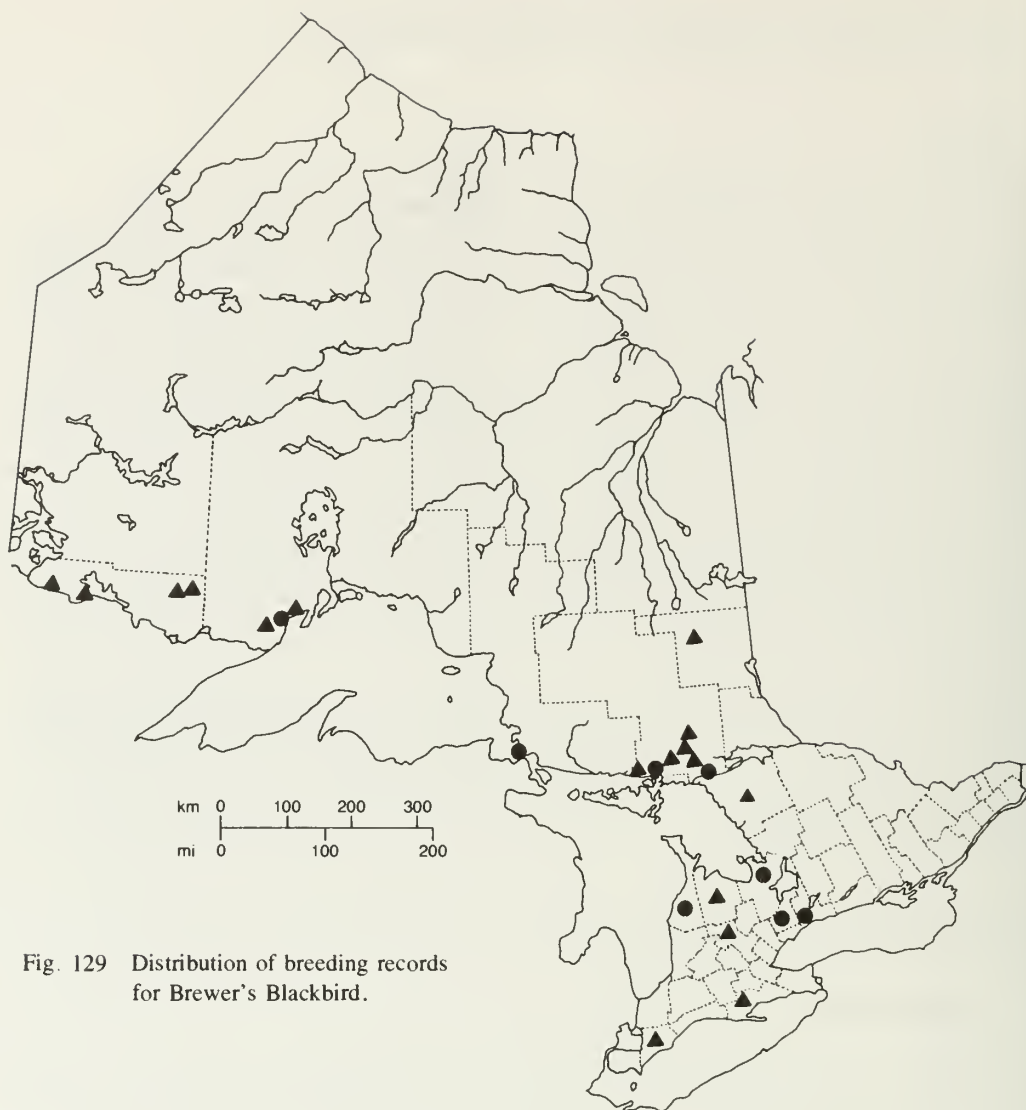


Fig. 129 Distribution of breeding records for Brewer's Blackbird.

Brewer's Blackbird, *Euphagus cyanocephalus* (Wagler)

Nidiology

RECORDS 204 (53 colonies, 10 isolated nestings, ca 253 nests) representing 14 provincial regions.

This western species breeds usually in small, loose colonies, and occasionally singly. It breeds along road and railway right-of-ways (Fig. 183) (edges, ditches, and embankments) (117 records), in fields and pastures (28 records), in open bogs (11 records), in open cutover or burned areas (5 records), on dry ridges and dunes (2 records), and in a black ash swamp (1 record). Sites were usually open and were in both dry and wet areas. Colony sites were often reused annually for a number of years. The number of pairs per colony varied from 2 to

12, and the average size of 51 estimated colonies was 5 pairs. Nests were usually at least 38 m (125 ft) apart, and frequently farther.

Nests were often, but not invariably, well hidden and usually were located on the ground (162 nests), but sometimes were elevated (22 nests). Ground nests often were in depressions in the ground, at least sometimes excavated by the female, or were in ground vegetation such as moss, and were variously situated in or under clumps of grasses and weeds (38 nests); in or under shrubs (37 nests); at the base of saplings, stumps, and trees (8 nests); under dead branches (3 nests); in moss (3 nests); fairly exposed on bare ground (2 nests); under an overhanging bank (1 nest); in an open end of a fallen stump (1 nest); and in a pail lying on its side (1 nest). Elevated nests (4 noted over water) were in living trees or shrubs (18 nests); in a cavity in a dead tree (1 nest); on top of a sawed-off stump (1 nest); in an open Tree Swallow nest box (1 nest); and in rushes (1 nest). Both coniferous trees (2 spp., 10 nests) and deciduous trees and shrubs (4 spp., 8 nests) were used for elevated nests, and those selected most commonly were pine spp. (8 nests), spruce spp. (3 nests), blueberry (3 nests), Labrador tea (2 nests), and Manitoba maple (2 nests). Heights of 15 elevated nests ranged from 0.2 to 2.7 m (0.5 to 9 ft), with 8 averaging 1.2 to 1.8 m (4 to 6 ft).

Nests (Fig. 184A) were well-constructed, woven cups whose exteriors were composed of grasses, plant stalks, twigs and rootlets, hair, mosses, and mud. They were lined with rootlets, fine grasses, hair, fishing line, bracken fern fronds, and plant stalks. Nine nests had outside diameters ranging from 13.5 to 17 cm (5.3 to 6.7 inches), inside diameters from 7.5 to 10 cm (3 to 3.9 inches), outside depths from 5.5 to 8.5 cm (2.2 to 3.3 inches), and inside depths from 4 to 6 cm (1.6 to 2.4 inches).

EGGS 127 nests with 1 to 6 eggs; 1E (1N), 2E (1N), 3E (3N), 4E (24N), 5E (74N), 6E (24N).

Average clutch range 5 eggs (74 nests).

Cowbird parasitism 196 nests with 1 parasitized (0.5%).

The extremely low rate of parasitism is notable because of the high incidence of parasitism in western Canada (Friedmann et al., 1977).

INCUBATION PERIOD 4 nests: 1 of at least 12 days, 1 of 13 days, 2 of at least 13 days.

EGG DATES 127 nests, 6 May to 26 June (153 dates); 64 nests, 28 May to 31 May.

Double broods were not reported, but renestings occurred after some nests were destroyed or depredated.

Breeding Distribution

The Brewer's Blackbird (Fig. 184B) is a relatively recent addition to the list of breeding birds of Ontario. It was first noted nesting near Thunder Bay in 1945 (Allin and Dear, 1947), and in the Sault Ste Marie region in 1954 (Baillie, 1961). Today it continues to breed annually between Lake of the Woods and Thunder Bay, from Sault Ste Marie to the Sudbury area, and recently (1984) has moved northeast into the Clay Belt area of Timiskaming District. It nests annually at scattered locations in the agricultural southern part of the province, south and west of the Canadian Shield.

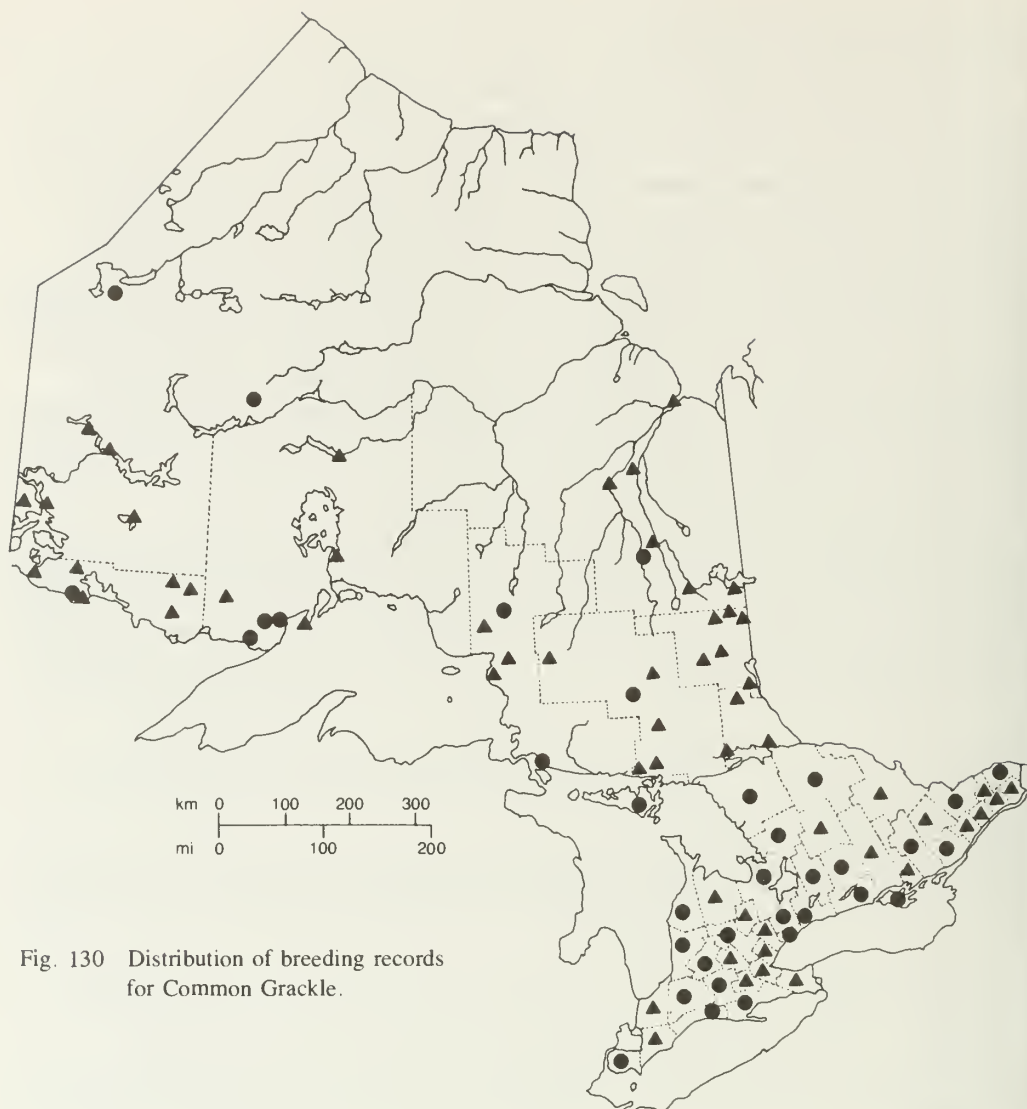


Fig. 130 Distribution of breeding records for Common Grackle.

Common Grackle, *Quiscalus quiscula* (Linnaeus)

Nidiology

RECORDS 2652 (2362 isolated nestings, ca 290 colonies, ca 4850 nests) representing all 52 provincial regions.

Breeds singly (2362 records) and in loose colonies (ca 2488 nests) of 2 to 200 pairs. The average size of 144 estimated colonies totalling 1451 nests was 10 nests.

Breeding habitats were woodland (225 records); urban and rural residential and recreational areas, including gardens, parks, farmyards, and golf courses (215 records); wetlands, including marshes, beaver ponds, swamps, and bogs (197 records); lake/river shorelines, islands, ditches, and dykes (75 records); farmland, including pastures and

abandoned fields (48 records); sand-dune areas (9 records); and rock cliffs (6 records). Coniferous and mixed woodlands in total were selected slightly more often than deciduous. No noticeable preference was apparent for dry or wet areas—the choice seeming to depend on the availability of nest sites. Habitats were listed as described, but categories often overlapped.

With 1 exception, that of a nest on the ground at the base of a stump in a peat bog, all nests were elevated: in trees, shrubs, and vines (342 records); on or in manmade structures, including houses and other buildings, bridges, towers, dams, bird houses, posts, trellises, duck blinds, boards, and a bucket (137 records); in cattails/sedges/bulrushes/grasses (89 records); on stumps and logs (53 records); in upturned and exposed roots (14 records); and in crevices and on ledges of cliffs (3 records). Trees and shrubs were usually living, but sometimes were dead, and coniferous species (7 spp., 338 records) were preferred to deciduous (23 spp., 222 records). Those most often selected were cedar spp. (117 nests), spruce spp. (104 nests), pine spp. (68 nests), willow spp. (65 nests), juniper spp. (36 nests), and hawthorn spp. (33 nests).

Many tree and shrub nests were in crotches, fewer were on horizontal branches, and some were supported between 2 or 3 upright and adjacent trunks. Most were centrally located at or near the main trunk, with a number reported away from it. Distances from the trunk of 48 nests ranged from 0.3 to 6 m (1 to 20 ft), with 24 averaging 1.2 to 3.7 m (4 to 12 ft). In small trees, nests were often near the top. There were 49 tree nests placed in natural and old woodpecker cavities. Grackles usually built new nests each year, but sometimes repaired and reused old nests (once for 4 consecutive years). Three nests were built on top of old grackle nests and there were 3 reports of old nests of American Robin being used. Two nests were built into the bases of Osprey nests, and a third was built into the base of a Great Blue Heron nest. One nest was within 0.2 m (0.5 ft) of a Black-crowned Night-Heron nest, and still others were in the same tree as other nests of Common Grackle, Mourning Dove, American Robin, and Red-winged Blackbird. Within colonies, grackle nests were reported as close as 4.6 m (15 ft) to each other. Heights above land or water of 753 nests in vegetation (rushes/grasses, trees, shrubs, and vines) ranged from 0.2 to 18 m (0.5 to 60 ft), with 377 averaging 1.2 to 4 m (4 to 13 ft). Heights on manmade objects fell within the same range.

Nests were relatively large, bulky cups with exteriors woven of grasses, sticks and twigs, plant stalks, mud, string, paper/cloth/plastic/tape, leaves, bark, wool, feathers, manure, roots, mosses, catkins, and wire. Linings were of grasses, rootlets, hair, conifer needles, plant stalks, paper, fishing line, plant down, leaf pieces, and mosses. Some nests were homogeneously built of grasses (152 nests), sticks and twigs (14 nests), and plant stalks (2 nests). One very large, leafy nest, resembling a squirrel's drey, seemed to belong to 2 pairs, both with young. Fifteen nests had outside diameters ranging from 16.5 to 22 cm (6.5 to 8.7 inches), inside diameters from 8.5 to 13 cm (3.3 to 5.1 inches), outside depths from 8 to 22 cm (3.1 to 8.7 inches), and inside depths from 6 to 9 cm (2.4 to 3.5 inches).

EGGS 517 nests with 1 to 9 eggs; 1E (5N), 2E (34N), 3E (86N), 4E (196N), 5E (171N), 6E (23N), 7E (1N), 9E (1N).

Average clutch range 4 to 5 eggs (367 nests).

The 9-egg clutch (a tenth egg was on the ground) was probably from more than 1 female. A runt egg was reported in a nest. Eggs were laid at daily intervals, but longer intervals were sometimes reported.

Cowbird parasitism 2091 nests with 4 parasitized (0.2%).

INCUBATION PERIOD 14 nests, 11 to 14 days: 1 of no more than 11 days, 1 of 11 days, 1 of

at least 11 days, 2 of 12 days, 4 of at least 12 days, 4 of 13 days, 1 of 14 days.
In some nests hatching took longer than 24 hours.

EGG DATES 503 nests, 4 April to 12 July (591 dates); 251 nests, 9 May to 30 May.
A nest was reported being built on 13 March in Rondeau Provincial Park, Kent County, which may have resulted in an earlier egg date than recorded above. Renestings were reported and in 2 of them the clutch size was 3 eggs. No double broods were reported.

Breeding Distribution

The Common Grackle breeds throughout southern Ontario, and across northern Ontario as far north as Favourable Lake and Moosonee.

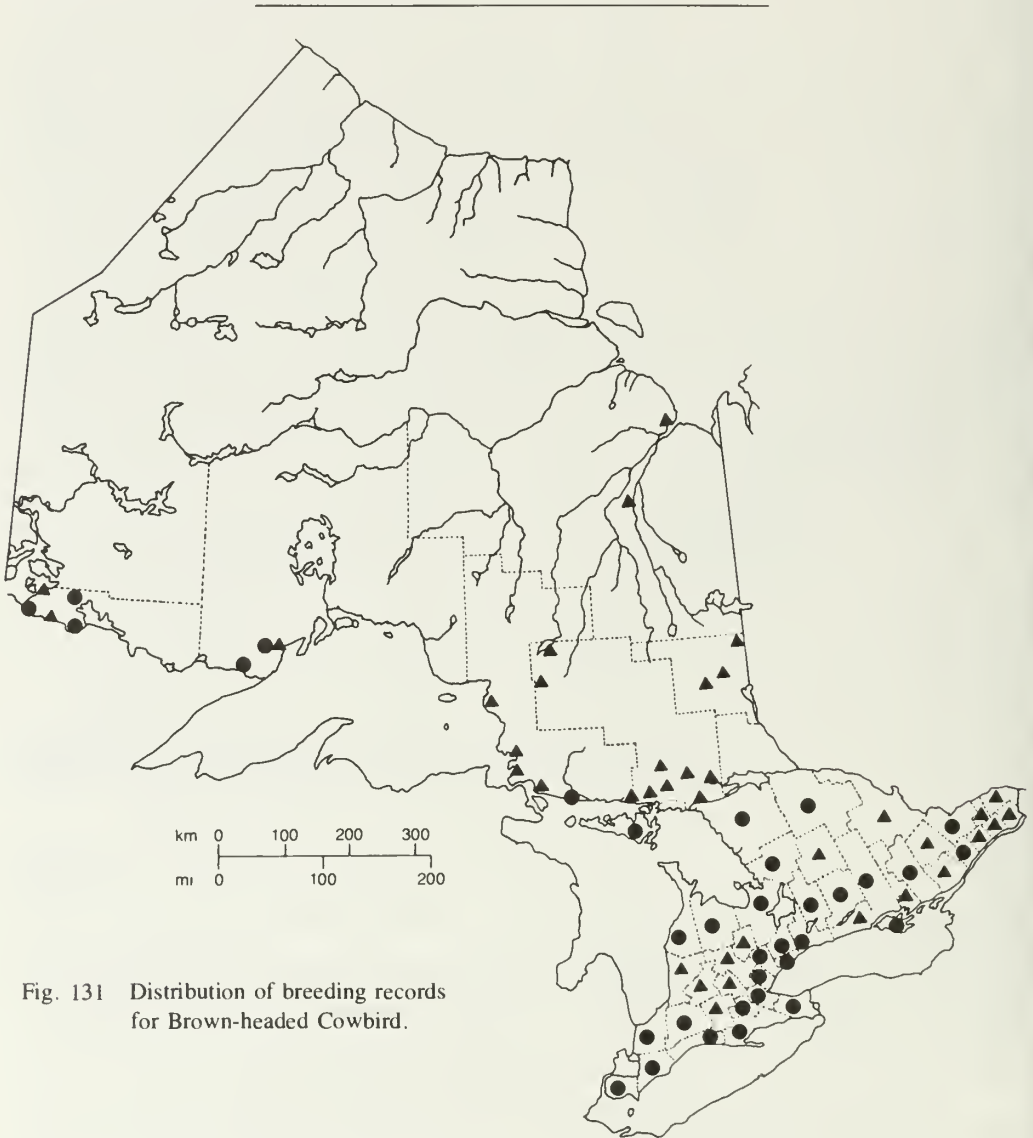


Fig. 131 Distribution of breeding records for Brown-headed Cowbird.

Brown-headed Cowbird, *Molothrus ater* (Boddaert)

Nidiology

RECORDS Eggs or young noted in 2989 hosts' nests, representing 50 provincial regions. The Brown-headed Cowbird, to date, has parasitized a total of 86 species in Ontario, including a single record each for Virginia Rail and Spotted Sandpiper, which were probably accidental and unique hosts, and excluding a record for American Crow, which may well have carried a cowbird egg (damaged) to its nest. The total number of hosts' nests with known contents was 44 788, and the percentage parasitism for all species was 6.7.

The 10 hosts with the largest number of parasitized nests, which constituted 67.6% of all cowbird records, were Chipping Sparrow (451), Song Sparrow (420), Yellow Warbler (399), Red-winged Blackbird (163), Eastern Phoebe (162), Red-eyed Vireo (136), American Goldfinch (90), Veery (70), Cedar Waxwing (67), and Northern Cardinal (63). One of these, the Cedar Waxwing, is a known rejecter species (Rothstein, 1975). Hosts with more than 20 parasitized nests (26 spp.) comprised 87.9% of all cowbird records; hosts with more than 15 parasitized nests (30 spp.) comprised 90.2%; and hosts with more than 10 parasitized nests (38 spp.) comprised 93.3%.

Significant levels of parasitism, based on a minimum of 50 nests per host with known contents, indicated that House Finch (42.2%), Purple Finch (39.8%), Red-eyed Vireo (38.4%), Chipping Sparrow (32%), Yellow-rumped Warbler (31.1%), and Yellow Warbler (29.6%) were the highest, and that Tree Swallow (0.02%), Barn Swallow (0.1%), Eastern Bluebird (0.1%), Common Grackle (0.2%), Spotted Sandpiper (0.2%), and American Robin (0.3%) were the lowest.

Cowbird parasitism in Ontario has apparently continued to increase (see figures for Chipping and Vesper sparrows and Purple Finch in species' accounts) due, in part at least, to land clearing for agricultural purposes and the increase in number of Christmas tree farms (Fig. 181) and other preferred habitat.

Although the following presentation of facts was largely based on data from cowbird hosts, it seemed reasonable to assume that cowbirds exercised their own preferences in the selection of breeding habitat, nest site, nest height, and the host to be parasitized. Based on 1645 parasitized nests, most were in dry, open, or semi-open areas with growths of deciduous (196 nests), mixed (167 nests), and coniferous (35 nests) shrubs or small trees a predominant feature. In order of preference, breeding habitats were farmland areas (897 records), including overgrown fields and fencerows (442 nests), young conifer plantations and orchards (341 nests), and open fields (114 nests); woodland areas (235 records), including wooded edges (208 nests), second-growth woods (19 nests), mature woods (7 nests), and swamps (1 nest); residential areas (232 records), including gardens, parks, and streets; shrubby edge areas (217 records), including shorelines and flood plains (145 nests), and roadsides (72 nests); and wet areas (64 records), including cattail marshes, sedge meadows, fens, bogs, and muskeg.

Hosts' nests (Figs. 188B, 203, 204A, B) were most often elevated (1925 records—80.4%) and less often were on the ground (468 records—19.6%). Elevated nests were in the following sites: living deciduous (963 nests) and coniferous (561 nests) trees and shrubs, as well as dead trees and stumps (12 nests); outside and inside buildings (92 nests), and on bridges (34 nests); and cavities in trees, bird houses, fence posts, and light fixtures (28 nests). Nests in deciduous trees, shrubs, and vines (47 spp., 963 nests) were selected more often than those in coniferous trees and shrubs (8 spp., 561 nests), and those most frequently used were hawthorn spp.

(253 nests), pine spp. (232 nests), spruce spp. (131 nests), maple spp. (116 nests), white cedar (114 nests), raspberry and other *Rubus* spp. (84 nests), willow spp. (63 nests), and apple (51 nests). Ground nests were in the following sites: in clumps of grasses, weeds, cattails, and ferns (313 nests); at bases of shrubs and trees, and among roots (120 nests); in or under brush, dead branches, and leaves (29 nests); under overhanging rocks (21 nests); in sphagnum hummocks (13 nests); in rock crevices (13 nests); under rocks, logs, and boards (8 nests); beside logs (4 nests); and in upturned roots (4 nests). Heights of 1925 hosts' nests ranged from 0.2 to 19.8 m (0.5 to 65 ft), with 963 averaging 0.9 to 2.1 m (3 to 7 ft). There were 704 hosts' nests (29.4%) at heights between 0.2 and 1.1 m (0.5 and 3.5 ft); 1025 (42.8%) at heights between 1.2 and 3 m (4 and 10 ft); and 196 (8.2%) at heights between 3.4 and 19.8 m (11 and 65 ft).

Inner nest diameters of the 6 most frequently and/or heavily parasitized hosts (1479 nests—50% of all nests) ranged from ca 3.8 to 7.6 cm (1.5 to 3 inches), with 5 of the 6 hosts averaging ca 5 cm (2 inches), possibly indicating that small nests (and small hosts) may be advantageous to the survival of cowbird young.

EGGS 2504 nests with 1 to 12 cowbird eggs; 1E (1635N—65.3%), 2E (616N—24.6%), 3E (172N—6.9%), 4E (56N—2.2%), 5E (13N), 6E (6N), 7E (4N), 10E (1N), 12E (1N). *Average number of eggs per nest* 1 to 2 eggs (2251 nests—90%).

A bias due to human interference was indicated by 724 records (27%) which described removal and destruction of cowbird eggs and young, and which sometimes caused nest desertion. The figures were for all host species except the 6 known rejecter species, Eastern Kingbird, American Robin, Gray Catbird, Brown Thrasher, Cedar Waxwing, and Northern Oriole (Rothstein, 1975), and 2 "accidental" hosts, Virginia Rail and Spotted Sandpiper. Eggs were usually laid at daily intervals, but intervals of 2 and 4 days were each reported once. Eggs were laid before any host eggs were laid (115 records), after some host eggs were laid (81 records), after the last host egg was laid (8 records), after host young were in the nest (5 records), and in old or deserted nests (3 records). There were 2 records of 2 cowbird eggs appearing in nests on the same day, indicating that more than 1 female was parasitizing those nests.

Multiple visits to 150 nests indicated that hosts' eggs often disappeared when cowbird eggs were laid, apparently removed by the cowbird. At 4 nests cowbirds were observed ejecting hosts' eggs and at another nest host young were removed and cowbird eggs deposited. At 82 nests host young or eggs disappeared as the young cowbird(s) grew larger, and at 4 nests living or dead young of the host were noted on the ground or outside the nest bowl.

Host defences against cowbird parasitism included nest abandonment; egg removal, noted for 6 acceptor and 3 rejecter species; and eggs being buried or built-over. Young cowbirds also died when fed an improper diet by some hosts (see House Finch account).

INCUBATION PERIOD 13 nests, 9 to 14 days; Eastern Phoebe (7 nests, 9 to 12 days), Red-winged Blackbird (2 nests, 9 and 10 days), Northern Cardinal (1 nest, 14 days), Indigo Bunting (1 nest, 12 days), Purple Finch (1 nest, at least 10 days), American Goldfinch (1 nest, 9 days).

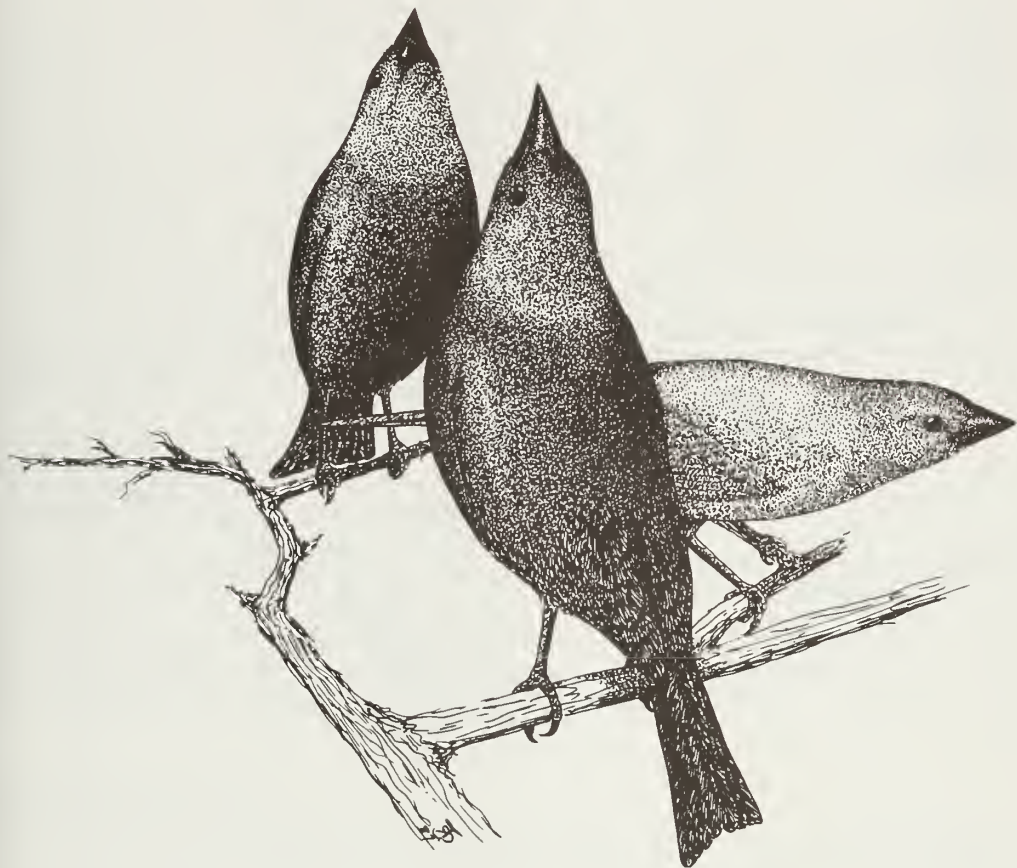
The incubation period was considered to be the time elapsed between the laying of the last host egg (when the host began to incubate) and the hatching of the cowbird egg(s). Incubation periods of less than 10 days probably indicated that hosts began incubation before the clutch was complete (Nice, 1953). Eggs at times hatched before the hosts' eggs, and if they were larger than the hosts' eggs they may have derived more heat during incubation and consequently hatched sooner. In a Northern Cardinal nest a cowbird egg took longer to hatch

than the host's eggs. A large clutch of eggs due to cowbird parasitism may be more difficult to incubate efficiently and thus result in an increased incubation period.

EGG DATES 2449 nests, 17 April to 5 August (2596 dates); 1225 nests, 28 May to 20 June. Some second nestings of Eastern Phoebe in the same nest were reported parasitized.

Breeding Distribution

The Brown-headed Cowbird breeds throughout southern Ontario. In northern Ontario it breeds in settled regions along the southern periphery but becomes rather scarce as far north as Pickle Lake and Moosonee.



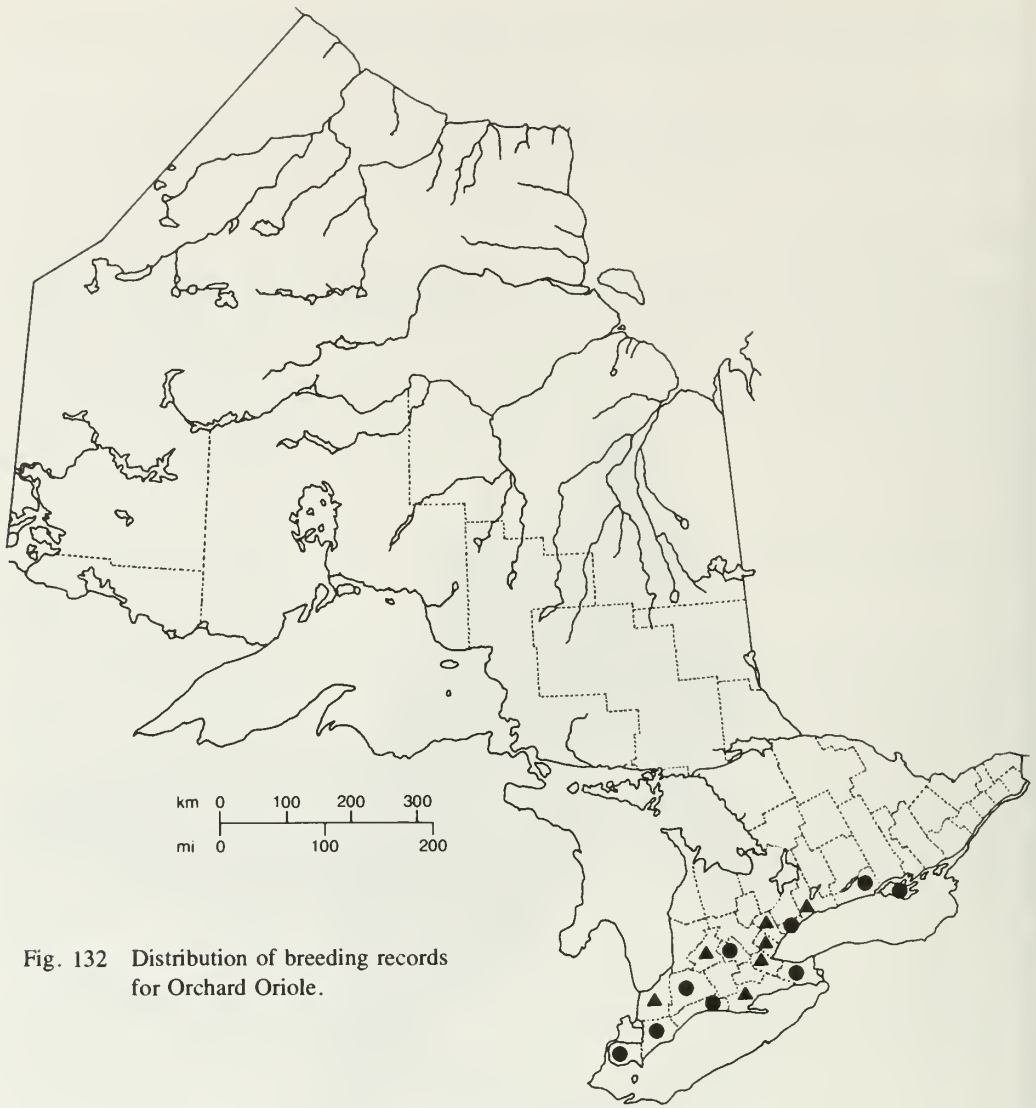


Fig. 132 Distribution of breeding records for Orchard Oriole.

Orchard Oriole, *Icterus spurius* (Linnaeus)

Nidiology

RECORDS 51 nests representing 14 provincial regions.

Breeds in rural areas in farm orchards, shrubby fields, and farm gardens (15 nests); in open parkland areas (campgrounds, picnic areas, and near buildings) (12 nests); in urban gardens (7 nests); and in a woodland edge (1 nest). Breeding habitats were characteristically open, and with little or no understory.

All nests were elevated in trees, shrubs, and vines, with deciduous species (12 spp., 27 nests) preferred to coniferous (3 spp., 8 nests). The most frequently selected nest trees were apple (9 nests), maple spp. (4 nests), spruce spp. (4 nests), and pear (3 nests). Nests were randomly positioned from near the top to the lower portions of the tree, and were usually suspended at forks near the end of horizontal branches. They were sometimes well concealed in foliage. Active nests of Northern and Orchard orioles were reported in adjacent trees. A pronounced tendency was noted for nests of Orchard Oriole to be built in the same vicinity in successive years; a pair used the same tree for 3 successive years, and another nest was built 5 cm (2 inches) from the previous year's nest. Heights of 28 nests ranged from 1.8 to 20 m (6 to 65 ft), with 14 averaging 3.7 to 6 m (12 to 20 ft).

Nests were described as pendant, basketlike pouches with deep cups. They were woven of coarse grasses (occasionally green) on the exterior, and with finer grasses in the lining. Eight nests had outside diameters that ranged from 8.5 to 10 cm (3.3 to 3.9 inches), inside diameters from 5 to 6 cm (2 to 2.4 inches), outside depths from 5 to 7.5 cm (2 to 3 inches), and inside depths from 3.5 to 6 cm (1.4 to 2.4 inches).

EGGS 19 nests with 1 to 5 eggs; **1E** (3N), **2E** (2N), **4E** (11N), **5E** (3N).

Average clutch range 4 eggs (11 nests).

Cowbird parasitism 24 nests with 7 parasitized (29.2%).

INCUBATION PERIOD 1 nest, at least 11 days.

EGG DATES 18 nests, 24 May to 10 July (21 dates); 9 nests, 3 June to 18 June.

At 2 nests more than 1 male was noted in attendance (2 males at 1 nest and 3 at the other). Occasionally males in immature plumage were noted as breeding birds.

Breeding Distribution

The Orchard Oriole breeds mainly in the Deciduous Forest region. A few may nest, still south and west of the Canadian Shield, as far north as Bruce and Simcoe counties, where they have been seen in summer.

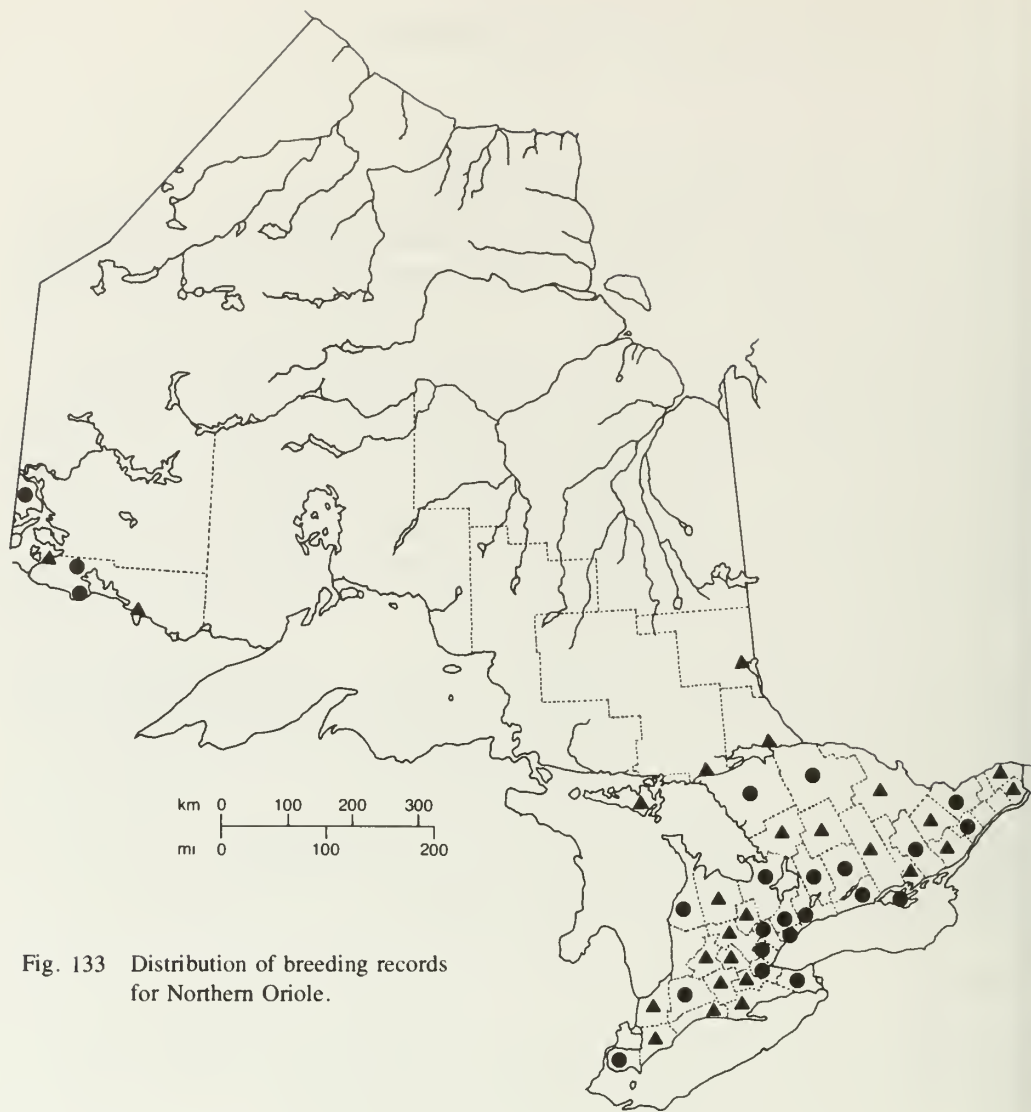


Fig. 133 Distribution of breeding records for Northern Oriole.

Northern Oriole, *Icterus galbula* (Linnaeus)

Nidiology

RECORDS 712 (713 nests) representing 44 provincial regions.

Breeds in wooded areas (96 nests) which are usually deciduous and only occasionally are mixed or coniferous (with a few deciduous trees present); in rural and residential gardens (63 nests); at shorelines of rivers, lakes, marshes, and swamps (55 nests); at roadsides (47 nests); in fields with shade trees and hedgerows, or which were overgrown (30 nests); in parks, schoolyards, and playing fields (13 nests); in orchards (11 nests); and in heath/tamarack bogs (3 nests).

Nests were elevated in trees and occasionally shrubs which were usually living (2 dead). Deciduous trees and shrubs (19 spp., 378 nests) were greatly preferred to coniferous (6 spp., 23 nests), and those most frequently selected were elm spp. (122 nests), maple spp. (71 nests), poplar spp. (56 nests), willow spp. (33 nests), birch spp. (28 nests), and oak spp. (14 nests). One nest tree had a DBH of 25.4 cm (10 inches). Most nests were suspended at the end of branches or in outer branches, with only a few at the centre of the tree (4 were near the trunk). They almost invariably hung from branches to which they were attached by their rims. One reported nest was not suspended but was not otherwise described, and 2 nests were resting in crotches although presumably were also attached by their rims. Old nests were sometimes reused in the following year. One nest was 3 m (10 ft) distant from an occupied nest of Eastern Kingbird. Heights of 400 nests ranged from 1.2 to 30.5 m (4 to 100 ft), with 200 averaging 5.5 to 10.7 m (18 to 35 ft).

Nests were woven pouches with exteriors of grasses, plant fibres and stalks, hair, bark strips, string and thread, plant down, cloth, rootlets, paper, feathers, pine needles, and vines. Linings were of fine grasses, hair, plant down, feathers, and pine needles. Thirteen nests had outside diameters ranging from 8 to 12.7 cm (3.1 to 5 inches), inside diameters from 4 to 6 cm (1.6 to 2.4 inches), outside depths from 9 to 25 cm (3.5 to 9.8 inches), and inside depths from 7 to 17 cm (2.8 to 6.7 inches).

EGGS 117 nests with 1 to 6 eggs; 1E (3N), 2E (2N), 3E (17N), 4E (34N), 5E (40N), 6E (21N).

Average clutch range 4 to 5 eggs (74 nests).

Cowbird parasitism 168 nests with 10 parasitized (6%).

The Northern Oriole is a known rejecter species (Rothstein, 1975).

INCUBATION PERIOD No information.

EGG DATES 121 nests, 18 May to 24 June (126 dates); 61 nests, 4 June to 11 June.

Breeding Distribution

The Northern Oriole breeds throughout southern Ontario. In northern Ontario it is found in the areas between Kenora and Thunder Bay, from Sault Ste Marie to Sudbury, and occasionally as far north as Lake Superior Provincial Park or southern Timiskaming District.

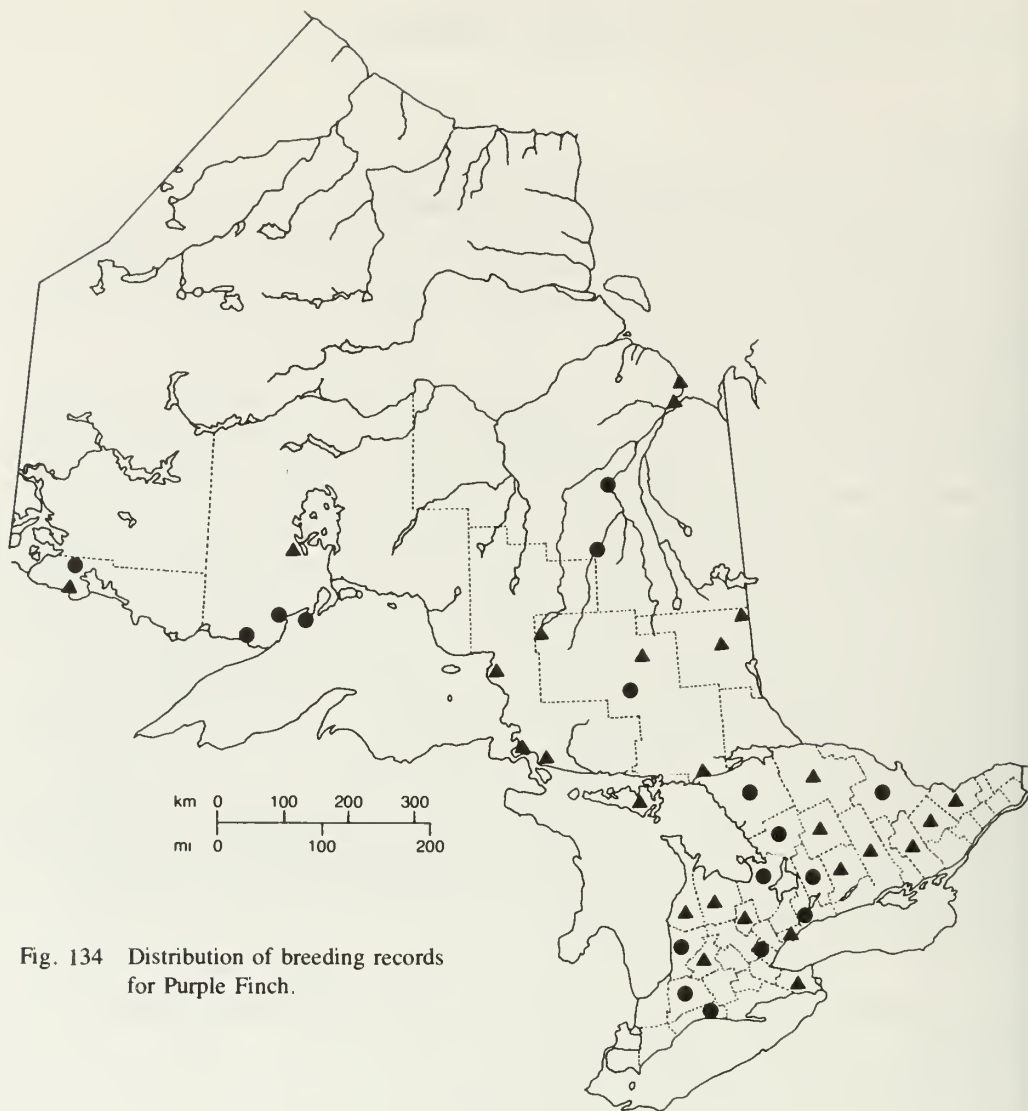


Fig. 134 Distribution of breeding records for Purple Finch.

Purple Finch, *Carpodacus purpureus* (Gmelin)

Nidiology

RECORDS 115 nests representing 29 provincial regions.

Breeds in conifer plantations (predominantly Christmas tree farms—Fig. 181) (47 nests); mixed (14 nests), coniferous (7 nests), and unspecified woods (3 nests); sphagnum bogs and marshes (5 nests); residential and park areas (4 nests); shrubby pastures (4 nests); and island and river shores (2 nests). Wooded habitats were usually open and occasionally wet.

Nests were invariably in conifers, and those selected were pine spp. (43 nests), spruce spp. (26 nests), balsam fir (9 nests), white cedar (4 nests), hemlock (1 nest), and tamarack (1 nest). Nest locations varied from the top to the lower portion of trees, with the greatest number in the upper third, especially in the preferred smaller trees. In small trees most nests were probably near or at the trunk, but, where specified, 3 nests were at the trunk and 6 were away from it, with 2 of the latter at distances of 0.2 and 3 m (0.5 and 10 ft). They were often well hidden in thick growths of branchlets. One nest was 1.8 m (6 ft) from an active nest of Chipping Sparrow and 3.7 m (12 ft) from that of American Robin. Another Purple Finch nest was 91 m (300 ft) from an active nest of the same species. Heights of 87 nests ranged from 0.8 to 18 m (2.5 to 60 ft), with 43 averaging 1.5 to 7.5 m (5 to 25 ft).

Nests were small, neat cups with shallow bowls (2 were described as loosely woven). Exteriors were of grasses, conifer twigs, plant fibres, plant stalks, rootlets, pine needles, bark strips, lichens, and plant down. Linings were of hair (rabbit noted), rootlets, plant down, plant fibres, fine grasses, feathers, and bark strips. Ten nests had outside diameters that ranged from 8.5 to 11 cm (3.3 to 4.3 inches), inside diameters from 5 to 6 cm (2 to 2.4 inches), outside depths from 3.5 to 6 cm (1.4 to 2.4 inches), and inside depths from 2 to 4 cm (0.8 to 1.6 inches).

EGGS 82 nests with 1 to 6 eggs; 1E (12N), 2E (10N), 3E (26N), 4E (24N), 5E (9N), 6E (1N).

Average clutch range 3 to 4 eggs (50 nests).

Cowbird parasitism 88 nests with 35 parasitized (39.8%).

In Grey County 27 of 37 (73%) nests were parasitized—an extremely high percentage. One nest contained 7 cowbird eggs.

INCUBATION PERIOD 3 nests: 1 of at least 11 days, 1 of at least 12 days, 1 of ca 13 days.

EGG DATES 79 nests, 17 May to 5 August (105 dates); 39 nests, 10 June to 1 July.

The protracted period of egg dates suggested second broods, but none were reported.

Breeding Distribution

The Purple Finch breeds throughout southern Ontario where coniferous woods or plantations exist, and across northern Ontario at least as far north as Favourable Lake and Moosonee and probably somewhat farther.

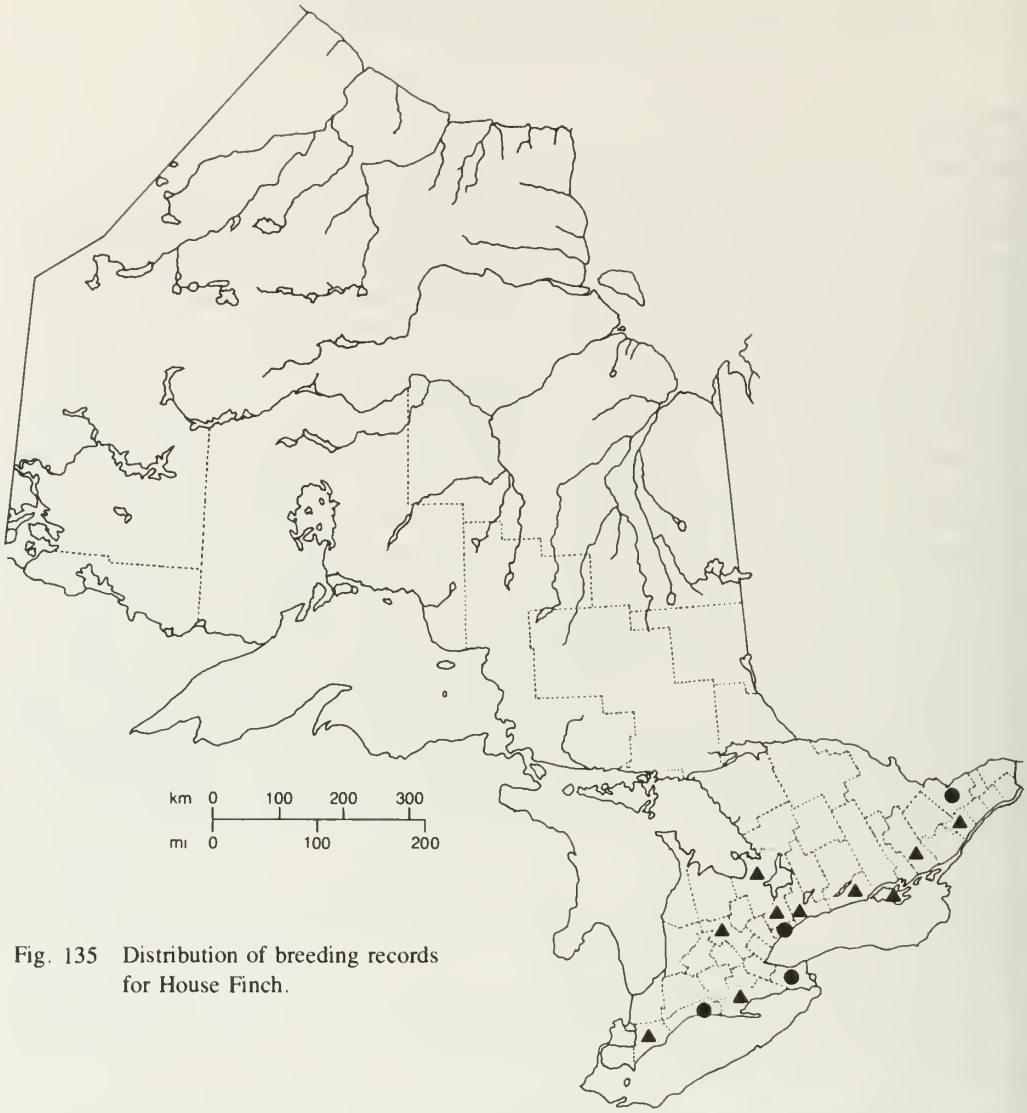


Fig. 135 Distribution of breeding records for House Finch.

House Finch, *Carpodacus mexicanus* (Müller)

Nidiology

RECORDS 119 nests representing 7 provincial regions.

Breeds in residential lawns and gardens (Fig. 193), usually near and sometimes on dwellings.

Nests were elevated, usually in coniferous trees (107 nests), less often on or in buildings (4 nests), and in flowerpots (3 nests). One nest was on a rose trellis against a wall. Tree nests were in spruce spp. (48 nests), juniper spp. (38 nests), and white cedar (21 nests). They were usually positioned near the tops of trees and were most often against the trunk on horizontal branches. In larger trees nests were at times some distance from the trunk, also on horizontal branches. Two nests were under aluminum window awnings, another was on a veranda overhang, and a fourth was on an upright stud inside a garage. Two of the flowerpots containing nests were hanging. Active nests of American Robin and House Sparrow were found in the same tree with an active nest of House Finch. A tree nest location and a veranda nest location were reported to be reused the following year. Heights of 109 tree nests ranged from 1 to 10 m (3.3 to 33 ft), with 55 averaging 2.3 to 3.4 m (7.5 to 11.2 ft).

Nests (Fig. 194A) were cup-shaped with exteriors usually composed of grasses, rootlets, and small twigs, and less often also contained string, tinsel, cellophane, wood shavings, and other plant materials. Linings were characteristically of fine grasses, and occasionally included string, hair, feathers, and other plant materials. One nest contained a cigarette butt. Eighteen nests had outside diameters ranging from 8.5 to 11 cm (3.3 to 4.3 inches), inside diameters from 5 to 7 cm (2 to 2.8 inches), outside depths from 4 to 9 cm (1.6 to 3.5 inches), and inside depths from 2 to 5 cm (0.8 to 2 inches).

EGGS 44 nests with 3 to 6 eggs; **3E** (1N), **4E** (21N), **5E** (20N), **6E** (2N).

Average clutch range 4 to 5 eggs (41 nests).

Cowbird parasitism 64 nests with 27 parasitized (42.2%).

Despite the high rate of parasitism, the cowbird young invariably died because of the unsuitable seed diet fed by the foster parents.

INCUBATION PERIOD 30 nests, 10 to 14 days, with 15 averaging 11 to 12 days: 3 of 10 days, 13 of 11 days, 9 of 12 days, 3 of 13 days, 2 of 14 days.

EGG DATES 58 nests, 25 May to 3 August (112 dates); 29 nests, 16 June to 26 June.

The protracted period of egg dates would suggest second broods.

Breeding Distribution

The House Finch was introduced to eastern North America in 1940 when numbers were released on Long Island, New York. The species has subsequently spread across much of the northeastern United States and into southern Ontario. The first sightings in the province date from 1970 and the first nesting was documented in 1978 at Niagara-on-the-Lake (James, 1978). The species is continuing to increase in numbers and to expand its range. Breeding reports have come from as far north as Simcoe and Renfrew counties, although nest records have not been received from those places.

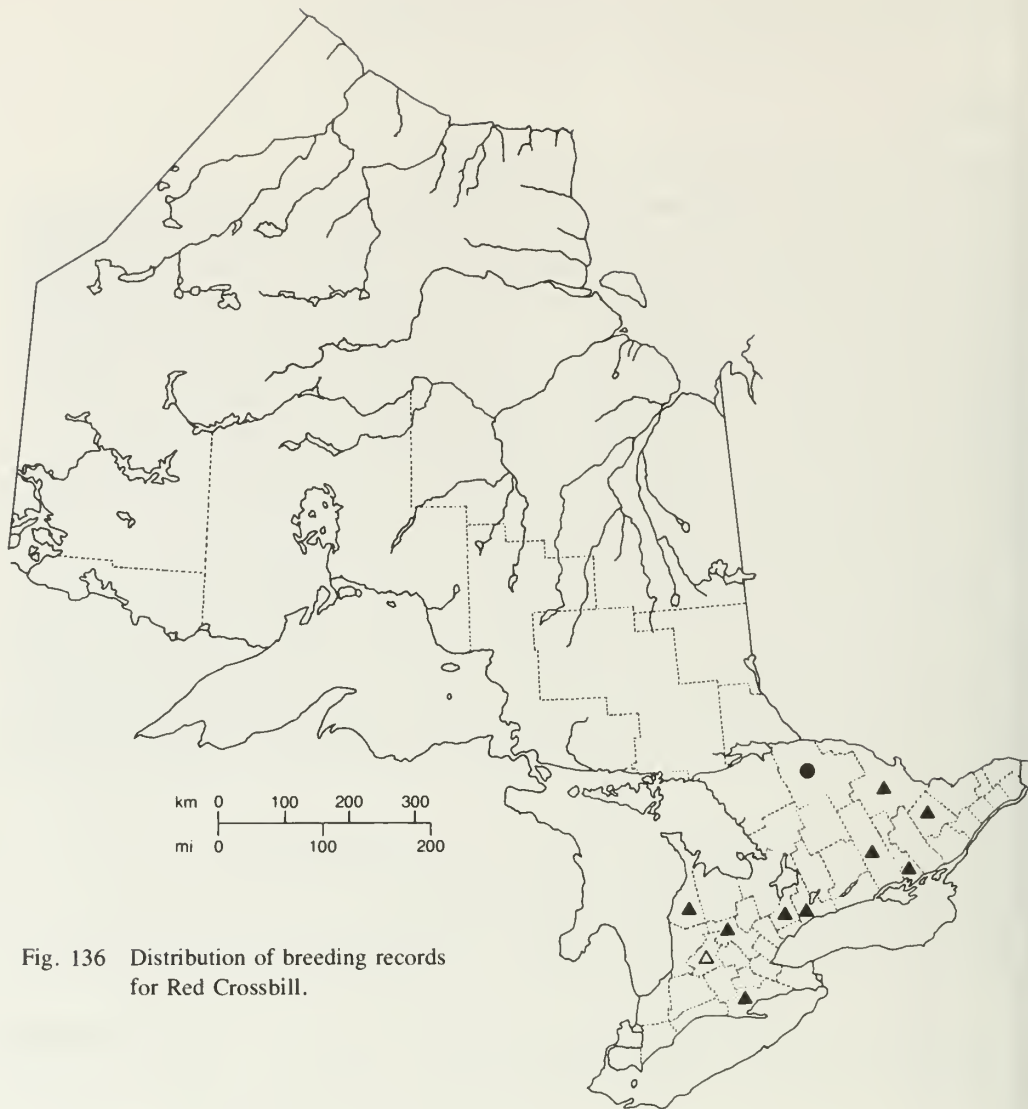


Fig. 136 Distribution of breeding records for Red Crossbill.

Red Crossbill, *Loxia curvirostra* Linnaeus

Nidiology

RECORDS 8 nests representing 4 provincial regions.

If we ignore a doubtful 1909 nesting record for Middlesex County (Saunders and Dale, 1933), then only 8 nests of Red Crossbill have been reported in Ontario: 5 in April 1948 in Lanark County or Nipissing District; the sixth, a nest under construction, on 30 January 1983 in Algonquin Provincial Park, Nipissing District; the seventh, a nest under construction, on 16 February 1985 in Durham RM; and the eighth on 2 March 1985 in Lennox and Addington County.

Four nests were discovered in Nipissing District at Pimisi Bay near each other in a mixed second-growth forest: 1 nest in a white pine, 1 in a red pine, and 2 in white spruces. The nests were saddled on lateral branches at distances from the trunk of 0.9, 1.2, 1.4, and 2.4 m (3, 4, 4.75, and 8 ft). Heights of the 4 nests were 7, 8.5, 9.8, and 10.7 m (23, 28, 32, and 35 ft). Two of the nests were within 23 m (75 ft) of each other. The 1983 Algonquin Park nest was in a white pine at a height of 18 m (60 ft).

A nest was found in Lanark County, Pakenham Township, in a wooded section of the Pakenham Hills. This nest was in a white pine at a height of 6 m (20 ft) and was on a horizontal branch 0.9 m (3 ft) from the trunk. It was described as a heavy, felted nest.

The Durham RM nest was in a red pine in a plantation, and was at a height of 15 m (49.2 ft).

One of the 4 Nipissing nests was noted to be well concealed in a clump of small branchlets. Two of these nests had exteriors of conifer twigs and walls of bark strips, green moss, usnea lichen, and dead grasses. Linings were of hair (deer), feathers, usnea lichen, and a few pine needles. Four nests had outside diameters ranging from 13.3 to 14 cm (5.25 to 5.5 inches), inside diameters of 5 cm (2 inches), outside depths ranging from 7.6 to 8.9 cm (3 to 3.5 inches), and inside depths ranging from 3 to 4.1 cm (1.2 to 1.6 inches).

EGGS 3 nests with 2 eggs, 3 eggs, and 3 eggs, respectively.

INCUBATION PERIOD 2 nests, 1 of ca 13 days, 1 of 12 to 14 days.

The period for the latter nest depended on whether incubation commenced with the first or the third egg.

EGG DATES 3 nests, 4 April to 18 April (6 dates).

Breeding Distribution

The Red Crossbill is a species that apparently wanders widely and erratically, nesting at almost any time of year when food becomes plentiful. Thus, few nests have ever been found in Ontario and its breeding range is not accurately known. In summer it occurs across northern Ontario at least as far north as Lac Seul and Timmins, and probably much farther north in the west. In the south it is largely confined to a few of the most northerly districts on the Canadian Shield, although some occasionally range farther south to nest where coniferous trees are found in sufficient numbers. The species may occur even in the Deciduous Forest region where coniferous plantations provide a suitable food supply.

The 1909 nesting record for Middlesex County (Saunders and Dale, 1933) involved a 3-egg nest with 1 egg of cowbird. The nest and eggs were collected and are now in the Royal Ontario Museum (ROM 4178). They were collected on 29 April, and while the species of crossbill was not ascertained at the time, the collector felt sure that it was a crossbill nest. While the eggs seem to be characteristic of Red Crossbill, the nest itself contains no conifer twigs and was in a maple tree. The writers could not find evidence (in North America or the British Isles) that the species ever nests in deciduous trees. This doubtful record is the only instance of cowbird parasitism of the Red Crossbill (Friedmann, 1963).

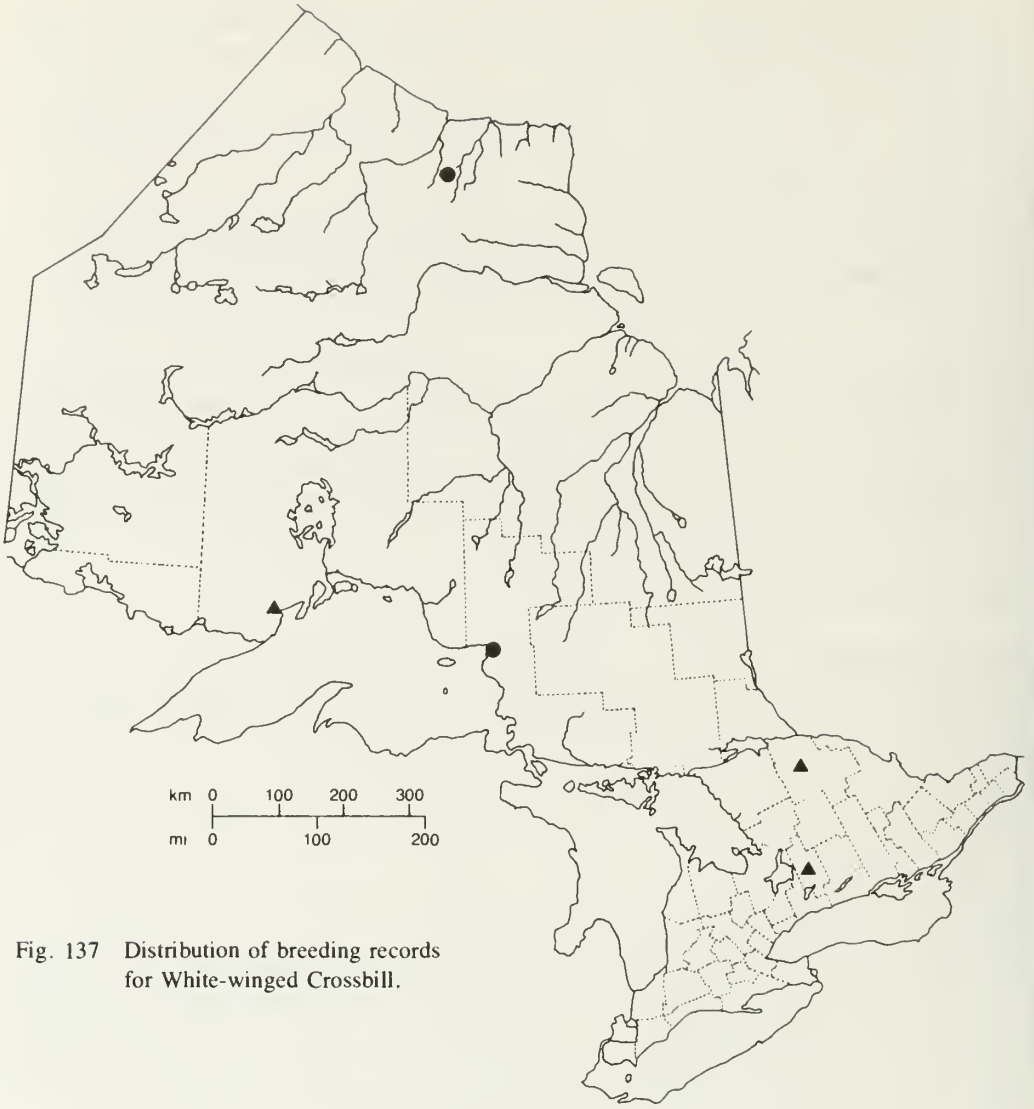


Fig. 137 Distribution of breeding records for White-winged Crossbill.

White-winged Crossbill, *Loxia leucoptera* Gmelin

Nidiology

RECORDS 3 nests representing 3 provincial regions.

The 3 nests of this species thus far discovered have provided us with very little nidiological information.

The first nest was found on 19 August 1926, at Head Lake in Victoria County. It contained eggs and was in a small cedar.

The second nest was found on 20 August 1928 at the Michipicoten River in northern Algoma District. It contained 3 young ready to leave the nest and was at a height of 12.5 m (41 ft) in a 14.6-m (48 ft) spruce with a DBH of 30.5 cm (12 inches). The nest was in a crotch formed by a small lateral branch and the main trunk. It was composed of fine twigs and was lined with usnea lichen (Fargo and Trautman, 1930). The nest and young were collected for the Ohio State Museum, Columbus, Ohio.

The third nest was discovered on 30 January 1983 in Nipissing District. It was under construction and was located in a black spruce at a height of 6 m (20 ft).

Breeding Distribution

The few breeding records available for the White-winged Crossbill in Ontario, give only an incomplete idea of its breeding range. The species appears to be more northerly in distribution than the Red Crossbill. It occurs, and probably breeds, throughout the forested portions of northern Ontario. Although it wanders widely throughout southern Ontario during the winter, relatively few, if any, remain to breed.



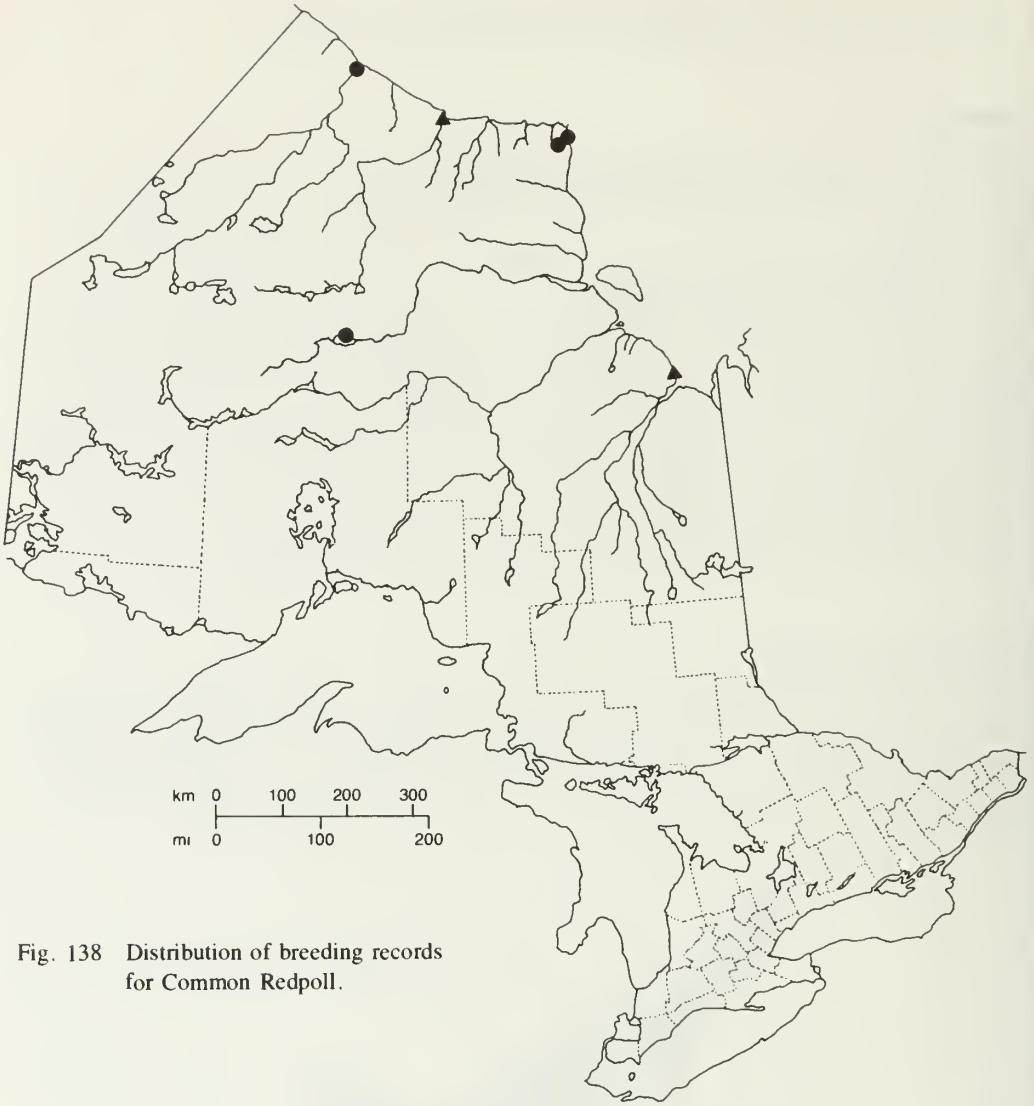


Fig. 138 Distribution of breeding records for Common Redpoll.

Common Redpoll, *Carduelis flammea* (Linnaeus)

Nidiology

RECORDS 19 nests representing 2 provincial regions.

All nests but 1 of the Common Redpoll thus far found in Ontario were on or near tundra barrens at Fort Severn, Winisk, and the Cape Henrietta Maria region in Kenora District. The 3 Fort Severn nests were on the barrens along the river, the Winisk nest was in a spruce/willow swamp adjacent to the Indian village, and the 14 Cape Henrietta Maria region nests were on tundra in willow thickets (Fig. 147) and were almost invariably near shores of ponds and streams. A more southerly nest was recently found at North Point, Cochrane District, in a semi-open alder/willow thicket.

With 2 exceptions, all nests were in arctic willows. The 2 exceptions were both on the ground, 1 in a dead grass clump at the base of a 0.9-m (3 ft) willow, and the other on a bank under willow branches. In the willows, nests were centrally placed in crotches, most often below the mid-point of the nest shrub. Heights of 16 nests ranged from 0.3 to 1.2 m (1 to 4 ft), with 8 averaging 0.4 to 0.6 m (1.3 to 2 ft).

Nests (Fig. 148B) were rough, thick-walled cups with exteriors of twigs, grasses, plant stalks, lichens, plant down, and feathers. Linings were of feathers, plant down, plant fibres, and fine grasses. Fourteen nests had outside diameters ranging from 7.5 to 12 cm (3 to 4.7 inches), inside diameters from 4.5 to 6 cm (1.8 to 2.4 inches), outside depths from 5 to 10 cm (2 to 4 inches), and inside depths from 3 to 4 cm (1.2 to 1.6 inches).

EGGS 13 nests with 3 to 5 eggs; **3E** (2N), **4E** (8N), **5E** (3N).

Average clutch range 4 eggs (8 nests).

Four other nests contained 4, 4, 4, and 5 young, respectively.

INCUBATION PERIOD No information.

EGG DATES 16 nests, 16 June to 22 July (19 dates); 8 nests, 7 July to 15 July.

Breeding Distribution

Most nests of the Common Redpoll (Fig. 148A) found in the province have been located along the Hudson Bay and northern James Bay coasts. The first of these was found in 1940 at Fort Severn by C. E. Hope (Baillie, 1960). Although summer sightings have occurred as far south as Thunder Bay and Smoky Falls, there is little evidence to confirm that the species nests regularly anywhere except near the Hudson Bay coast. On 13 August 1939, C. E. Hope collected a juvenile bird (ROM 32828) at Attawapiskat Lake. This bird was obviously capable of flight, but since it was a young bird it is unlikely that it had travelled very far from its place of origin. In addition, in 1984, a single nest was located on the southern James Bay coast at North Point. The species wanders widely in winter, and perhaps as a result of southern incursions, some birds do not return all the way to the northern coastal areas where most would be expected to nest. The number of breeding birds and their distribution apart from the Hudson Bay areas has yet to be determined.

[*Note:* Birds of the “hoary” form were found to be breeding in extreme northwestern Ontario in 1986 (Cadman et al., in prep.).]

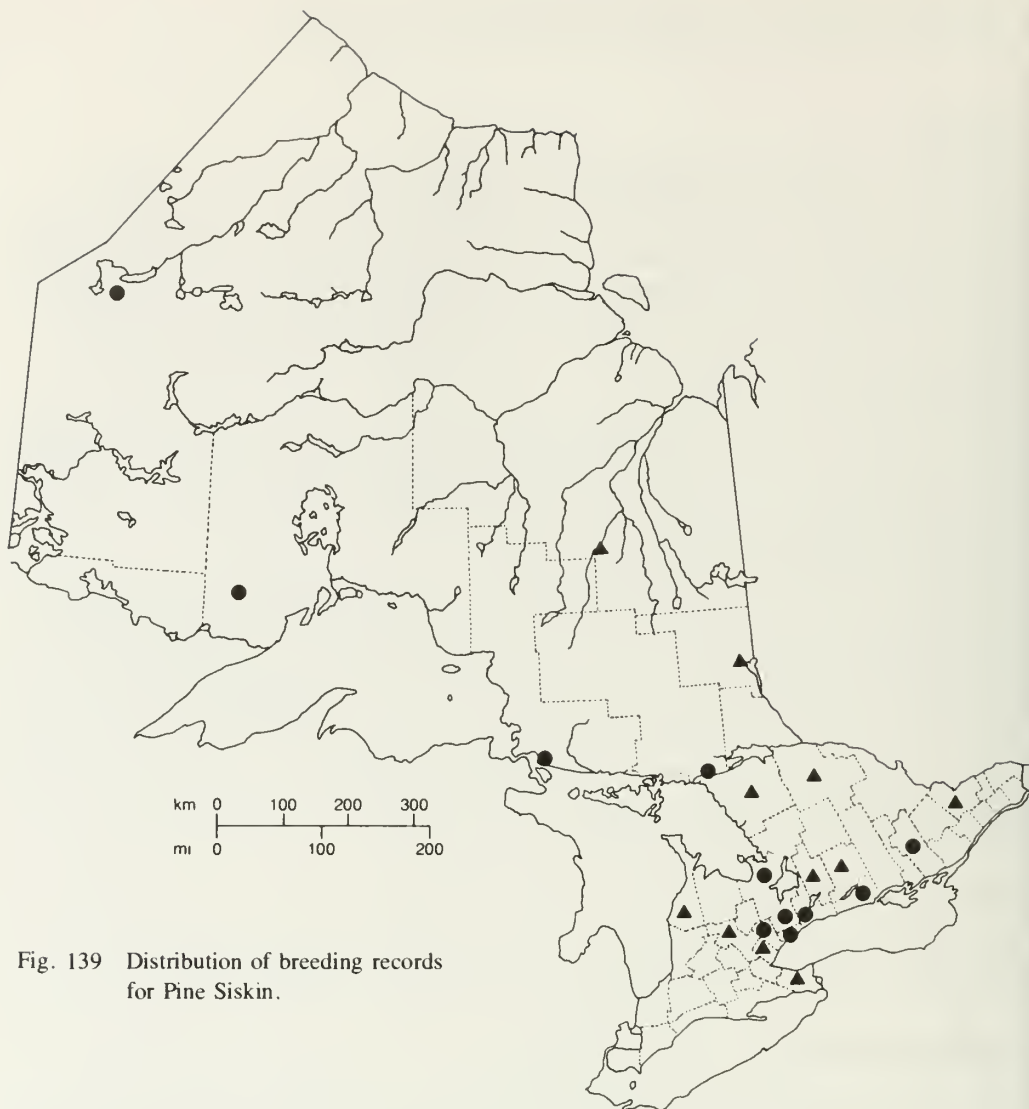


Fig. 139 Distribution of breeding records for Pine Siskin.

Pine Siskin, *Carduelis pinus* (Wilson)

Nidiology

RECORDS 27 (30 nests) representing 19 provincial regions.

The Pine Siskin nests in coniferous trees in both large and small stands and in hedgerows. Breeding habitats were residential, urban properties (4 nests); coniferous woods (3 nests); a college campus (3 nests); mixed, second-growth woods (2 nests); a tamarack bog near a river (1 nest); and a hedgerow beside a road (1 nest).

Nests were invariably in conifers, and those selected were spruce spp. (11 nests), pine spp. (4 nests), balsam fir (1 nest), hemlock (1 nest), tamarack (1 nest), and white cedar (1 nest). They were placed on lateral limbs away from the trunk and sometimes near the end of the limb (8 nests), or were against the trunk (1 nest). Distances from the trunk of 4 nests were 1.1, 2.3, 2.4, and 2.5 m (3.5, 7.5, 8, and 8.2 ft). Nests were concealed and supported on the limb, sometimes at forks, by small branchlets. Heights of 16 nests ranged from 1.8 to 10 m (6 to 32.8 ft), with 8 averaging 3.5 to 6 m (11.5 to 20 ft).

Nests were compact, flat cups with exteriors of conifer twigs (presumably from the nest tree), bark strips, and plant fibres, and with inner walls of grasses, mosses, rootlets, hair, plant stalks and fibres, plant down, and twine. Linings were of hair (horse and cow noted), with the occasional addition of plant down, fine bark strips, rootlets, fine grasses, cocoons and insect silk, and feathers. Four nests had outside diameters ranging from 8.5 to 10 cm (3.3 to 3.9 inches), inside diameters from 4 to 5.5 cm (1.6 to 2.2 inches), outside depths from 4.5 to 6 cm (1.8 to 2.4 inches), and inside depths from 2.5 to 3.5 cm (1 to 1.4 inches).

EGGS 16 nests, with 1 to 5 eggs; 1E (1N), 2E (6N), 3E (2N), 4E (5N), 5E (2N).

Average clutch range 3 to 5 eggs (9 nests).

Cowbird parasitism 15 nests with 3 parasitized (20%).

INCUBATION PERIOD 1 nest, at least 11 days.

EGG DATES 15 nests, March to 23 July (18 dates); 7 nests, 19 April to 21 June.

In common with some other members of the family Fringillidae, the timing of nesting periods fluctuates widely. Second broods are a possibility, although none were reported.

Breeding Distribution

The Pine Siskin breeds across the province as far north as Favourable Lake and perhaps Big Trout Lake in the west, and at least to Kapuskasing in the east. In southern Ontario a few nest as far south as Halton RM, farther on occasion (Niagara RM), but most nest on the Canadian Shield north of Lake Simcoe and Ottawa.

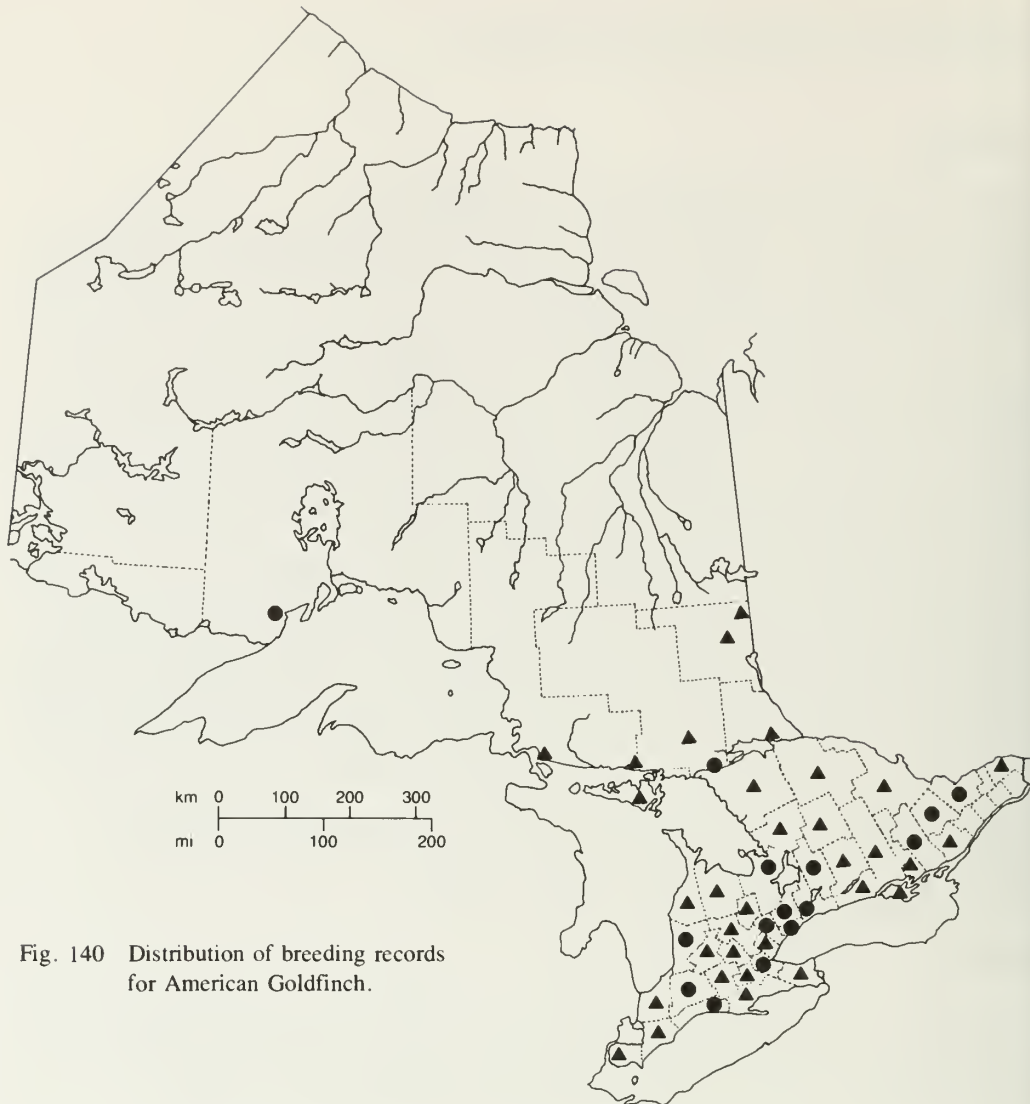


Fig. 140 Distribution of breeding records for American Goldfinch.

American Goldfinch, *Carduelis tristis* (Linnaeus)

Nidiology

RECORDS 1251 nests representing 43 provincial regions.

Breeds in farming areas, including overgrown fields, pastures, hawthorn meadows (Fig. 179), orchards, fencerows, and conifer plantations (106 nests); at roadsides and shorelines of rivers/ponds/marshes (41 nests); in woodlands and swamps (24 nests); in gardens, residential streets, farmyards, and cemeteries (21 nests); in willow swales and heath muskeg (3 nests); and in sand-dune areas (1 nest). Hawthorn meadows were the preferred habitat; nests there were often close together and approximated a colonial situation. Woodlands were usually open, or nests were at their edges. Habitats were listed as described, but categories often overlapped.

Nests were invariably elevated, usually in living deciduous and coniferous shrubs and

trees, and occasionally in non-woody plants (3 nests, 1 each in burdock, goldenrod, and unspecified weeds). Deciduous shrubs and trees (25 spp., 225 nests) were greatly preferred to coniferous (4 spp., 14 nests), and those most frequently selected were hawthorn spp. (69 nests), maple spp. (32 nests), willow spp. (31 nests), apple (14 nests), birch spp. (12 nests), and dogwood spp. (11 nests).

Nests were usually in upright crotches or forks (55 nests), with some on lateral branches (8 nests). They were more often away from the trunk than near it, and the distances from the trunk of 10 nests ranged from 0.9 to 4.6 m (3 to 15 ft), with 5 averaging 1.2 to 3 m (4 to 10 ft). More nests were reported near the tops of shrubs or trees than at mid-points and lower. In successive years nests were reported in the same vicinity, and several nests were located in the same tree or shrub as previous years' nests. One nest was 30.5 cm (12 inches) above a previous year's nest, another was 3.7 m (12 ft) from an active nest of Cedar Waxwing, and a third was very near a hornet nest. Heights of 259 nests ranged from 0.3 to 16.8 m (1 to 55 ft), with 129 averaging 1.2 to 2.4 m (4 to 8 ft).

Nests were tight, compact cups, with exteriors woven of grasses, plant down (thistle, milkweed, cattail, willow), plant stalks and fibres, bark, hair, string, leaves, twigs, spider and insect silk, pine needles, bud scales, roots, and mosses. Linings characteristically were composed of plant down (thistle and dandelion), and less often of grasses, plant fibres, hair, rootlets, and bark. One report described a double nest with a cowbird egg buried in the lower nest. Fourteen nests had outside diameters ranging from 7.5 to 10 cm (3 to 4 inches), inside diameters from 4.5 to 8 cm (1.8 to 3.1 inches), outside depths from 4.5 to 9.5 cm (1.8 to 3.7 inches), and inside depths from 2.5 to 5.5 cm (1 to 2.2 inches).

EGGS 268 nests with 1 to 7 eggs; 1E (3N), 2E (10N), 3E (10N), 4E (59N), 5E (108N), 6E (76N), 7E (2N).

Average clutch range 5 to 6 eggs (184 nests).

Eggs were usually laid at daily intervals, but longer intervals were reported.

Cowbird parasitism 1066 nests with 90 parasitized (8.4%).

The amount of parasitism is undoubtedly low because of the lateness of the nesting season of the American Goldfinch.

INCUBATION PERIOD 75 nests, 8 to 14 days, with 37 averaging 10 to 11 days: 1 of 8 days, 5 of 9 days, 20 of 10 days, 33 of 11 days, 13 of 12 days, 2 of 13 days, 1 of 14 days.

Although incubation periods were considered to be the interval between the laying of the last egg and the beginning of hatching, incubation often began before the laying of the last egg.

The early onset of incubation was obvious for the following reasons:

- a. As clutch sizes increased beyond 4 eggs, incubation periods averaged shorter in length.
- b. Incubation periods showed a marked variation in length.
- c. Many clutches took more than 1 day to hatch.

EGG DATES 244 nests, 13 June to 24 September (370 dates); 122 nests, 26 July to 8 August. Renestings (2 for some pairs) were frequently reported in the same nest, but more often in new nests. Double broods were also reported.

Breeding Distribution

The American Goldfinch breeds across the province as far north as Kenora and Cochrane, but seldom, if ever, farther north.

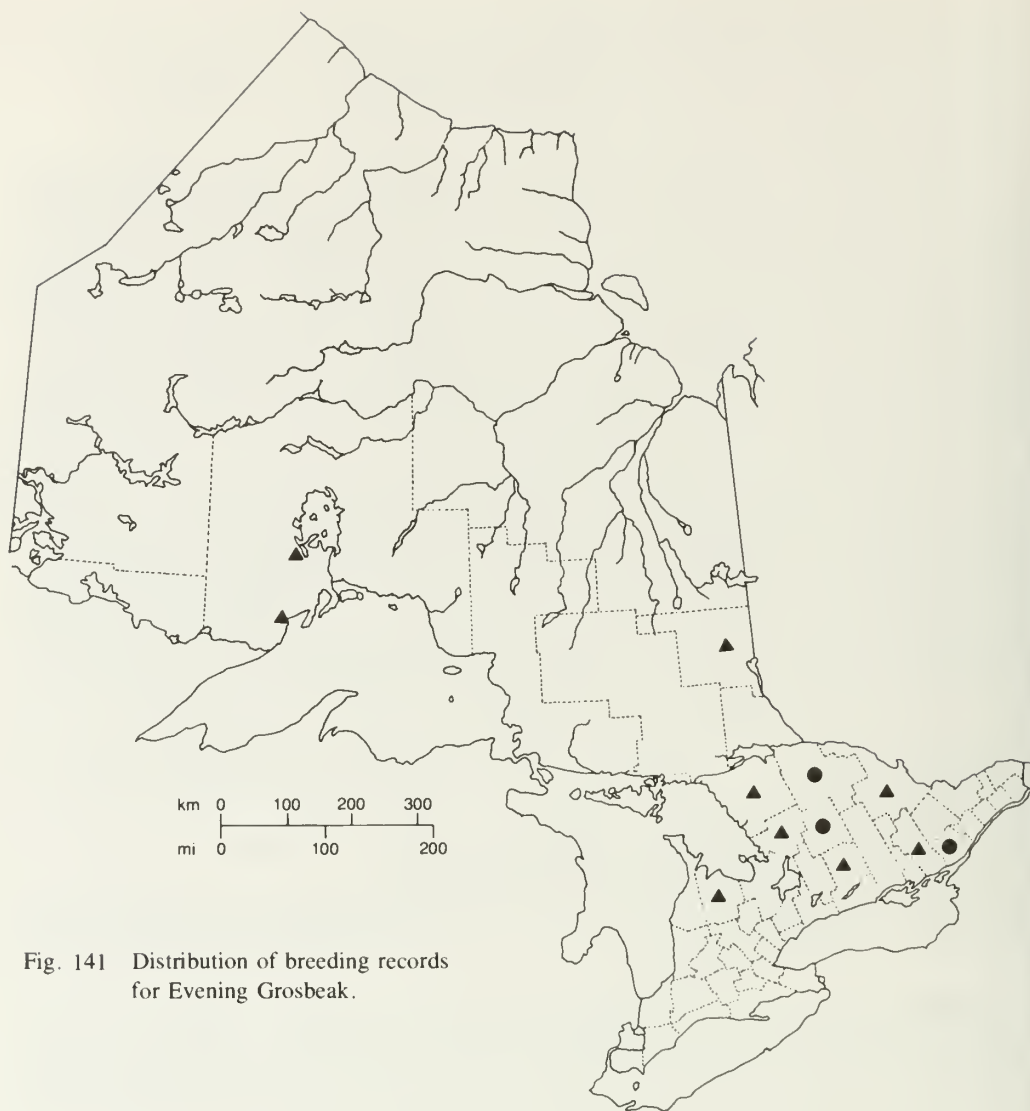


Fig. 141 Distribution of breeding records for Evening Grosbeak.

Evening Grosbeak, *Coccothraustes vespertinus* (Cooper)

Nidiology

RECORDS 10 nests representing 6 provincial regions.

Although the Evening Grosbeak is relatively common throughout its breeding range, nests are infrequently found because of the forest habitat and the considerable height at which they are typically located, usually in the dense foliage of conifers (Peck, 1973). Breeds in second-growth and mature forests, with mixed (5 nests; Fig. 165), unspecified (3 nests), and open coniferous (1 nest) types reported.

Nests were situated in living trees, with coniferous (5 spp., 6 nests) chosen more often than deciduous (2 spp., 3 nests). The selected nest trees were white birch (2 nests), white pine (2 nests), balsam fir (1 nest), beech (1 nest), black spruce (1 nest), white cedar (1 nest), and white spruce (1 nest). Nests were positioned in crotches, often near the tops of the trees. They were close to or against the main trunk (3 nests), or were away from the trunk (3 nests) at distances of 1 to 3 m (3.2 to 10 ft). Two nests were reported to be well concealed in dense foliage. Heights of 9 nests ranged from 7.5 to 16.8 m (24.6 to 55 ft), with 4 averaging 9.3 to 15 m (30.5 to 50 ft).

Nests (Fig. 166A) were composed of coniferous and deciduous sticks and twigs (5 nests), with 2 nests mainly formed of rootlets. One nest had usnea lichen on its exterior and another had dried moss. They were lined with rootlets, grasses, threadlike lichens, and pine needles. Three nests had outside diameters ranging from 12 to 14 cm (4.7 to 5.5 inches), inside diameters from 8 to 9 cm (3.1 to 3.5 inches), outside depths from 12.5 to 13 cm (4.9 to 5.1 inches), and inside depths from 3.2 to 10 cm (1.25 to 3.9 inches). One of these 3 nests was described as quite deep.

EGGS 5 nests with 3 to 4 eggs; **3E** (2N), **4E** (3N).

INCUBATION PERIOD No information.

EGG DATES 4 nests, 13 June to 4 July.

Breeding Distribution

The Evening Grosbeak expanded its range into and across the province from the west in the early part of this century. The first nest was found only in 1944 in Haliburton County (Peck, 1973). It now summers across the north as far north as Pickle Lake and Moosonee, and in southern Ontario mainly on the Canadian Shield as far south as the St Lawrence River.

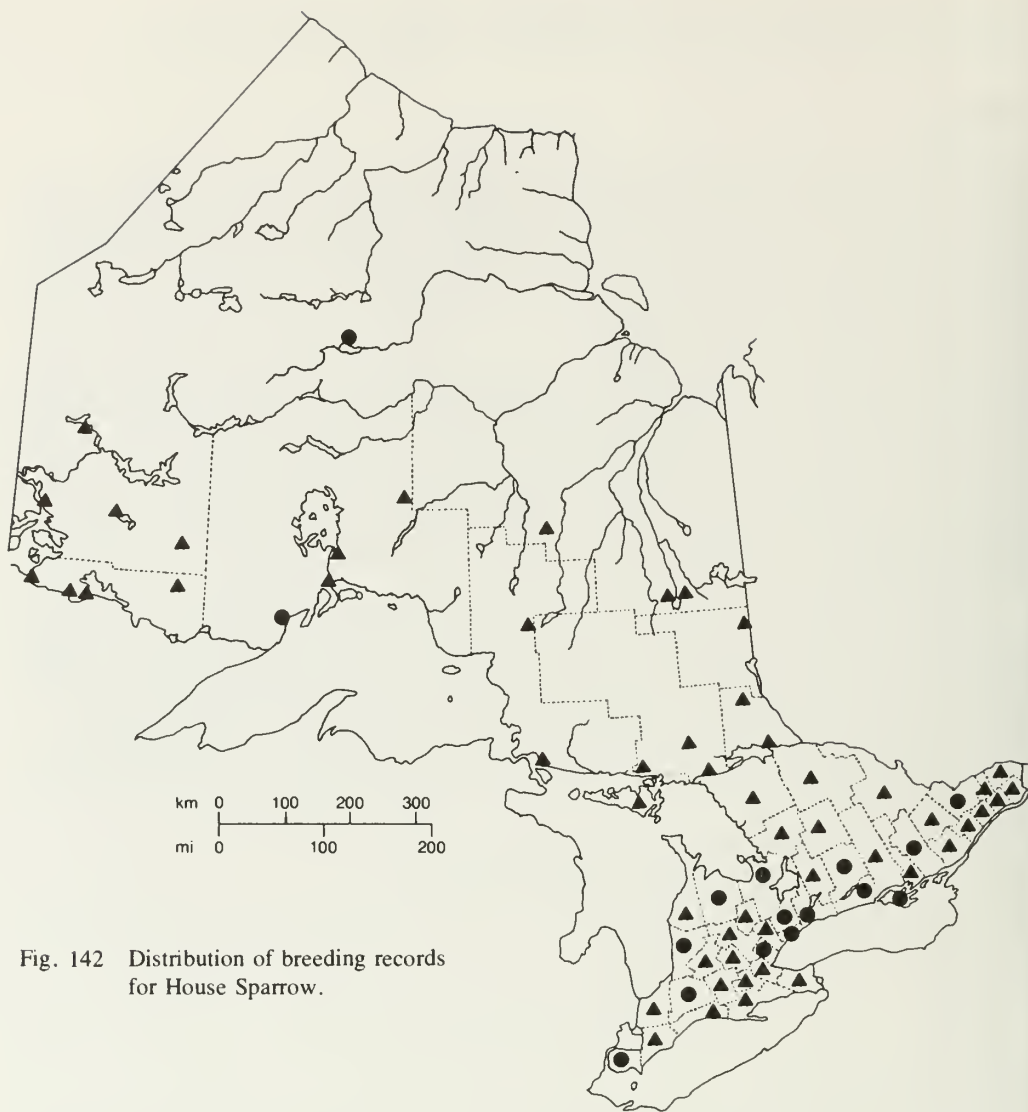


Fig. 142 Distribution of breeding records for House Sparrow.

House Sparrow, *Passer domesticus* (Linnaeus)

Nidiology

RECORDS 1408 (ca 1503 nests) representing all 52 provincial regions.

The House Sparrow is a numerous, highly gregarious species which often nests in such close proximity at favourable sites that a colonial situation is approximated. Breeding habitats are urban/rural residential and commercial areas, including various buildings and structures, gardens, and cemeteries (696 nests); farmland, including farmyards, roadsides, hedgerows, fields, and pastures (376 nests); wooded areas, including mixed and deciduous woods, orchards, and reforested plots (43 nests); river courses (40 nests); cottage and camping areas

(38 nests); treed sand dunes (25 nests); wetlands, including swamps, meadows, and dykes (11 nests); and railroad right-of-ways (5 nests). Wooded areas were usually open or nests were at clearings. Wet habitats apparently were chosen only because of the presence of suitable nest sites. Habitats were listed as described, but categories often overlapped.

Nests were elevated in bird boxes (529 nests), on buildings (420 nests), in trees (125 nests), on hydro poles/traffic lights/signs (61 nests), on bridges (54 nests), and in fence and other posts (9 nests). One nest was near the ground in a fallen fence post. Either nests were concealed in cavities or recesses of manmade structures and of trees, or they were exposed in trees and vines and on manmade structures. Concealed nests were in both single- and multiple-unit bird houses (70 in Purple Martin houses); in or on buildings in eaves and eavestroughs, holes, beams, roofs, canopies, ledges, fixtures, walls, and air conditioners; in trees in both natural and old woodpecker and chickadee cavities; in or on signs, traffic lights, and hydro and telephone poles/transformers/lines; on beams or in holes of metal and wooden bridges and culverts; in holes in posts; and in mail boxes. Exposed nests were ball-like structures placed in tree crotches, on beams of bridges and buildings, on hydro transformers and lines, in ivy and climbing plants on house walls, on silo ladders, on tops of pillars, and on light and other outdoor fixtures. Nest trees were both deciduous (12 spp., 61 nests) and coniferous (5 spp., 48 nests), and those chosen most frequently were spruce spp. (29 nests), white cedar (16 nests), maple spp. (11 nests), and willow spp. (11 nests). House Sparrows sometimes built on top of, covered over, or otherwise used the old nests of Barn Swallow (25 records), Cliff Swallow (24 records), American Robin (4 records), and Common Grackle (1 record). They usurped and/or used bird boxes intended for Purple Martins, Tree Swallows, House Wrens, and Eastern Bluebirds. Nests were built into the sides of occupied nests of Red-tailed Hawk (2 records) and Bald Eagle (1 record). Nests were often close together: 3 nests between 2 billboards were 0.3 m (1 ft) apart, and 6 occupied nests were on the same bridge railing. Groups of nests numbering from 2 to 12 were reported. Some nests were reused (once for 4 years). A nest in the same tree as an American Robin nest was reported on 5 occasions; a nest in the same tree as a nest of Chipping Sparrow and a nest in the same tree as nests of American Robin and House Finch were reported. Barn nest sites were sometimes shared with nesting Barn Owls and Rock Doves, and martin-house nests were sometimes shared with European Starlings. Heights of 115 tree nests ranged from 1.2 to 23 m (4 to 75 ft), with 58 averaging 3.7 to 7.6 m (12 to 25 ft). Heights of 468 nests in manmade structures, excluding bird boxes, ranged from 0.9 to 15 m (3 to 50 ft), with 234 averaging 2.7 to 5.5 m (9 to 18 ft).

Nests (Fig. 190B) were described as bulky, globular, and loosely woven. In cavities and recesses they varied greatly in size and the nest material tended to fill the available space. Exposed nests were ball-shaped, domed structures with an entrance hole on the side. Nest exteriors were usually composed of grasses, and less often included feathers, string/twine, bark, plant stalks, paper/plastic/cloth, sticks and twigs, roots, leaves, stuffing, and wool. Nests were characteristically lined with feathers, and less often with grasses, plant down, hair, paper/plastic/cloth, pine needles, mosses, and string. One large, narrowly compressed nest behind a basketball backboard had an outside diameter from entrance to rear of 45.7 cm (18 inches), an outside depth of 33 cm (13 inches), a tunnel-like entrance 28 cm (11 inches) in length, an inside depth of 11.4 cm (4.5 inches), and an inside diameter of 15 cm (6 inches). A ball-type nest had an outside diameter of 20 cm (8 inches), an outside depth of 25.4 cm (10 inches), and an entrance-hole diameter of 5 cm (2 inches).

EGGS 215 nests with 1 to 7 eggs; 1E (4N), 2E (6N), 3E (20N), 4E (62N), 5E (89N), 6E (30N), 7E (4N).

Average clutch range 4 to 5 eggs (151 nests).

Eggs were laid at daily intervals.

INCUBATION PERIOD 15 nests, 9 to 14 days: 3 of 9 days, 1 of ca 9 days, 2 of 10 days, 4 of 11 days, 1 of at least 11 days, 1 of 12 days, 1 of ca 12 days, 1 of 13 days, 1 of at least 14 days.

The earliest periods suggested that incubation commenced before the last egg was laid.

EGG DATES 211 nests, 4 April to 14 August (274 dates); 106 nests, 18 May to 10 June.

Renestings and double broods were often reported, usually in the original nest. Triple broods were reported twice.

Breeding Distribution

The House Sparrow breeds in farming and urban areas across the province as far north as Lake Attawapiskat and Moosonee.

Unconfirmed Breeding Species

The following species have been mentioned in various sources as breeding in Ontario, but inadequate material evidence has been secured to verify their status as breeding birds.

Western Kingbird, *Tyrannus verticalis* Say

On 26 June 1943, a nest with 3 eggs that was found in Kent County was reported to be that of a Western Kingbird (MacFayden, 1945). This nest and nest tree were photographed and black and white negatives are in the ROM (ROM PR 349, 350). However, no description of the birds is available, and the nest and eggs are not distinguishable from those of an Eastern Kingbird, using these photographs. The species has been noted in Ontario with increasing frequency, and certainly now occurs every year. Perhaps in the near future another nest will be located that can be documented more fully.

Kirtland's Warbler, *Dendroica kirtlandii* (Baird)

In the spring and summer of 1916, Dr P. Harrington and Dr F. A. Starr, stationed at the Petawawa Military Camp, Renfrew County, noted Kirtland's Warblers singing over a "fairly large area" and considered them to be "not uncommon" on the sandy jack pine plains (Harrington, 1939). Although they never found a nest they felt sure that the birds were breeding there. From their account there is reasonable evidence that at one time this species did nest in Ontario. But the population of this warbler became much reduced in numbers during the early part of this century. When Harrington returned to the Petawawa camp in 1939, he saw only a single bird after a considerable search of the area. It was possible, however, that a few pairs still nested in Ontario even after the Second World War. In 1945, D. H. and J. M. Speirs, with Dr E. L. Brereton, observed an adult pair with two immatures. These four birds were observed from 9 to 13 August near Barrie, Ontario (Speirs, 1984). Their observations provide the most compelling evidence that this species has been a breeding bird of Ontario.

In 1958 a male sang for most of the month of June on the Bruce Peninsula, but apparently did not find a mate (Gunn, 1958). In 1977 a single male was located at the Petawawa Military base, but a more thorough search of the jack pine stands in southern Ontario during the summer of 1978 failed to reveal a single pair. Again, in 1985, a lone male sang for more than 2 weeks in Simcoe County.

Snow Bunting, *Plectrophenax nivalis* (Linnaeus)

This species has been observed on a number of occasions in summer along the north coast of Ontario in tundra habitat (Peck, 1972). The first evidence of breeding was secured in 1985, on West Pen Island, Kenora District. On 20 July, D. Shepherd and G. Poole saw a family group with at least 2 weakly flying young (Cadman et al., in prep.).

Pine Grosbeak, *Pinicola enucleator* (Linnaeus)

The Pine Grosbeak has been seen in summer at numerous places throughout the forested portions of northern Ontario and as far south as Bruce and Renfrew counties in former years.

Nests were apparently found in Nipissing and Parry Sound districts in 1940, but neither was documented. A female with an unshelled egg (not preserved) in its oviduct was collected at Hawley Lake in 1958 (Baillie, 1960). These remain the only evidence of breeding in the province. Today the species probably breeds throughout the Boreal and Hudson Bay Lowland forest regions and at more isolated locations farther south, possibly even into southern Ontario.

Acknowledgements

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We would like to express our sorrow at the recent passing of R. C. Long, research associate in the ROM Department of Ornithology, who again helped greatly in the summarization of nest-card information for a number of species in Volume 2, and was aided by funds directed by J. C. Barlow, curator in the ROM Department of Ornithology. Rev. Long's exhaustive and continuing study of the American Robin is reflected in the authors' account of that species.

We are grateful to Mrs M. Goldsmith, secretary in the ROM Department of Ornithology, who typed the manuscript and helped in a myriad of tasks involving the ONRS; and to Miss J. Mannone, who ably proofread the manuscript.

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Appendix A

Additions and corrections to Volume 1 of Peck and James (1983) Common names in parentheses were those used in Volume 1, and scientific names are given for new breeding species and for species given new names in the 6th edition of the AOU check-list (1983), and the 35th supplement (1985).

Red-throated Loon

The first details of nests are now available, from 1 nest found 9 July 1984 on the James Bay coast ca 30 km (19 mi) south of Cape Henrietta Maria, and 2 nests found 30 June 1985 on Cape Henrietta Maria, all in Kenora District. The 1984 nest was on the shore of a small pond about 150 m × 25 m (500 ft × 80 ft), located less than 1 km (0.6 mi) from James Bay, in an area of old beach ridges covered with dry heath-lichen tundra. Very shallow water extended to the base of the nest, with deeper water about 2 m (6.6 ft) away. The nest platform had an outside diameter at its base of 55 cm (21.7 inches), an inside diameter of 20 × 24 cm (7.9 × 9.4 inches), an outside depth of 12 cm (4.7 inches), and an inside depth of 1.5 cm (0.6 inches). Nest material consisted of some rotting vegetation on a natural hummock, with sweet coltsfoot and sedges growing sparsely around the nest and even in the edges of the platform. A few eggshells were present, and a very young, downy chick was swimming with its parents on the pond. The 2 nests found in 1985 were just depressions on tiny peaty islets near the shores of shallow tundra ponds (of ca 30 × 40 m [100 ft × 130 ft] and ca 25 × 175 m [80 ft × 575 ft]). Clutch sizes were 1 and 2 eggs.

Pacific Loon, *Gavia pacifica* (Lawrence) (Arctic Loon)

Additional records are now available, confirming nesting all along the Hudson Bay coast. Specific sites were at the mouths of the Shagamu and Tamuna rivers and Ministik Creek, all in Kenora District.

Common Loon

There is a recent breeding record from Long Point, Haldimand-Norfolk RM (McCracken et al., 1981). Nesting has also been reported from Little Sachigo Lake, Webequie, and Kiruna Lake, all in Kenora District, and from the Tweed Lake area in Cochrane District.

Pied-billed Grebe

An additional record has come from Wharncliffe in Algoma District. There should be a nest record in Oxford County, but not in Brant County as indicated in Volume 1.

Horned Grebe

In July 1983, a pair with 3 young was reported from a pond at Fort Severn in Kenora District. This was the first substantial report of breeding in Ontario in 45 years. The species still appears to be a summer resident of the province, at least on occasion.

Red-necked Grebe

We have a breeding record at a new location, at Mattice in Cochrane District.

American White Pelican (White Pelican)

Volume 1 indicated that this species was first recorded as a breeding bird in Ontario about 1938. However, it appears that these birds were here many years prior to that time. Henry (1809) reported them as numerous on Lake of the Woods in 1775. Since they are often found with Double-crested Cormorants, it is strange that they were not mentioned as present in the 1790s by Tanner (*in* James, 1956). Possibly the species was absent from the lake for many years.

A new colony has also been reported from Burton Island in southeastern Lake of the Woods in Kenora District (Ryder et al., 1983).

Double-crested Cormorant

New colonies were reported from Burton Island in Kenora District, from Welcome Island near Thunder

Bay in Thunder Bay District, from Hamilton-Wentworth RM, and from Northumberland County. A single nest was also reported from Little Sachigo Lake in Kenora District, representing the most northerly record for this species in Ontario, about 400 km (250 mi) north of any other known nesting.

In Volume 1 reference was made to Baillie (1947), but the source given was incorrect. The entry which should have appeared under Baillie (1947) is given in Volume 2 (on page 311).

American Bittern

New nesting locations include the Cape Henrietta Maria region (site 416) in Kenora District, and North Point on James Bay in Cochrane District. Todd (1963) records an egg date of 10 August at Moose Factory, a date considerably later than those given in Volume 1.

Least Bittern

Additional records have come from Hastings and Lambton counties and Manitoulin District.

Great Egret

In the spring of 1985, a pair bred in a colony of Great Blue Herons and Black-crowned Night-Herons in Simcoe County (ROM PR 1540). We also have a record from Dickerson Island, Lake St Francis, just south of Glengarry County, in Quebec.

Snowy Egret, *Egretta thula* (Molina)

This species nested for the first time in Ontario and Canada in 1986 in Hamilton-Wentworth RM. The nest, from which 3 young fledged, was in a Black-crowned Night-Heron colony.

Green-backed Heron (Green Heron)

Earlier in the century this species was known only from the southern fringes of the province (Baillie and Harrington, 1936). It was reported nesting in Manitoulin District in 1975, and in 1984 from North Bay in Nipissing District. The species appears to be extending its range slowly northwards, now occupying all of southern Ontario, although not common on the Canadian Shield.

Black-crowned Night-Heron

A nest record is now available from Muskoka District.

Tundra Swan (Whistling Swan)

Additional breeding and nesting reports have come from East Pen Island, the mainland south of West Pen Island, 75 km (47 mi) west of Winisk, 25 km (16 mi) east of Winisk, 23 km (14.3 mi) south of the mouth of the Sutton River, near the base of Cape Henrietta Maria, and numerous other locations clustered in the northeastern corner of the province and relatively near the coast, all in Kenora District.

Trumpeter Swan, *Cygnus buccinator* Richardson

Lumsden (1984) has provided a historical review of the status of this species in eastern Canada. Although there is no definite nesting or breeding record yet available for Ontario, he feels that it probably bred widely through parts of the Hudson Bay Lowland, in most of western Ontario, in central Ontario in the Clay Belt, and in the extreme south along the shores of the Great Lakes and the St Lawrence River. Given the probable widespread distribution of the species in the province, and the report of breeding nearby in eastern James Bay (Quebec), it seems reasonable that this species should be considered as an addition to the breeding-bird list for Ontario.

Mute Swan

In 1984 a nest card was received showing a clutch size of 10 eggs, the largest reported for this species. Nesting has also been reported from Metropolitan Toronto RM.

Ross' Goose

Breeding has been confirmed on Akimiski Island, NWT (Weir, 1984), in James Bay.

Canada Goose

Breeding or nesting reports have been received from the Thorne River (near 55°N and between 90° and 91°W) in Kenora District; from Quetico Provincial Park in Rainy River District; from near the mouth of the Harricanaw River, from just north of Kesagami Lake, and on the Little Abitibi River at 49°45'N, all in Cochrane District; and from Essex County.

Wood Duck

Nest records have been received from east of Markstay in Sudbury District, and from Lennox and Addington County.

Green-winged Teal

Additional reports of breeding have come from Little Sachigo Lake, Kiruna Lake, and lower sections of the Fawn and the Sachigo rivers, all in Kenora District, and breeding records have been received from southern Nipissing District and York RM.

American Black Duck (Black Duck)

A breeding record for Grey County was received in 1986.

Northern Pintail (Pintail)

Breeding records have been received from Essex County, York RM, and from Kiruna Lake in Kenora District.

Cinnamon Teal, *Anas cyanoptera* Vieillot

In 1984 a pair of birds attempted to nest at the Amherstburg sewage ponds in Essex County (James, 1984). This first nesting in the province is about 1500 km (930 mi) from their usual breeding range, thus raising questions about the origin of these birds. However, again in 1984, a pair of birds was at the Townsend sewage ponds (Haldimand-Norfolk RM), but the female was killed before any nest was discovered.

Northern Shoveler

This species has now been found breeding on both James and Hudson Bay coasts (Ross and North, 1983). A few pairs may be expected almost anywhere along those coasts; specific reports come from the mouths of the Shagamu, Opinnagau, and Attawapiskat rivers, all in Kenora District. We also have reports from Essex, Lambton, and Simcoe counties, and York RM.

Gadwall

Breeding and nesting reports have come from Essex and Oxford counties.

American Wigeon

The sites of additional breeding records are Bearskin Lake in Kenora District, on the Little Abitibi River at 45°57'N in Cochrane District, North Bay and another location in southern Nipissing District, Sudbury in Sudbury District, and Simcoe County.

Canvasback

In 1983 at Luther Marsh in Dufferin County, a female with a brood of young was photographed by L. Yerex (ROM PR 1473-1479) to provide the first documentation of breeding by this species in the province (James, 1984).

In 1984 about 100 km (60 mi) north of Red Lake (at Berens Lake) in Kenora District, a female and a flightless young bird were seen, providing the first indication that this species is breeding in northwestern Ontario.

Redhead

In 1985 we received a breeding report from Cache Bay, Lake Nipissing, in Nipissing District.

Ring-necked Duck

New breeding or nesting records have come from Little Sachigo Lake in Kenora District; near the mouth of the Harricanaw River and Tweed Lake, both in Cochrane District; east of Kirkland Lake (Virginiatown) in Timiskaming District; as well as from Leeds and Simcoe counties and Parry Sound District.

Greater Scaup

Four nests were located in the Cape Henrietta Maria region in 1984. They were on the shores of lakes in open tundra, positioned in dense clumps of grasses or sedges, such that they were scarcely visible from directly above. Three were at the shores of lakes and 1 was about 2 m (6.6 ft) back from shore.

Nests were shallow depressions lined with pieces of dry sedge or grass blades, usually mixed with down and feathers. The amount of down increased as laying progressed. The 4 nests had outside diameters ranging from 20 to 26 cm (8 to 10 inches), inside diameters from 16 to 20 cm (6.3 to 8 inches), and inside depths from 9 to 10 cm (3.5 to 4 inches).

Two nests held 7 eggs and 2 had 9 eggs, all apparently complete clutches. Egg dates were 2 to 14 July, and all eggs were fresh or nearly fresh when found.

Lesser Scaup

Breeding records are now available from Kiruna Lake and Aquatuk Lake, both in Kenora District, where the species is relatively common. Therefore, it appears to breed throughout Ontario, and probably most commonly in lakes of the Hudson Bay Lowland.

Common Eider

We now have a breeding record from the mouth of the Sutton River, and 26 nest records from Cape Henrietta Maria, both in Kenora District. The 26 additional nests were all on islands in tundra lakes. Herring Gulls also were nesting on some of these islands. Most eider nests were within 1 m (3 ft) of shore and were heavily lined with down. Eggs numbered from 1 to 6 in each nest, but most clutches, except the largest, were probably incomplete. Egg dates ranged from 26 June to 3 July.

King Eider

In Volume 1 we indicated that no nests had ever been found, but the record from Cape Henrietta Maria in 1947 (Manning, 1952) did include the finding of a nest. Mr Manning has kindly provided us with a photograph (ROM PR 1361) taken at that time. The nest appeared to be on a bare gravel area. It consisted of an accumulation of dry grass or sedge or plant stems with green sedges or grasses growing from the edges, and was lined with down and feathers. There appeared to be 2 young and 2 eggs among the nest lining.

An additional breeding report has come from the mouth of the Sutton River in Kenora District.

Surf Scoter

A third breeding record has come from Kiruna Lake in Kenora District.

White-winged Scoter

Another breeding report has come from the mouth of the Winisk River in Kenora District.

Common Goldeneye

There is now a record from Hastings County.

Bufflehead

A historical record for Kent County is to be found in Morden and Saunders (1882).

Hooded Merganser

The Nipigon River was the site of an additional breeding report.

Common Merganser

Additional records came from Kiruna Lake in Kenora District, Lake Nipissing, and Waterloo County.

Red-breasted Merganser

Additional breeding reports have come from Kiruna Lake in Kenora District, just northeast of Pledger Lake in Cochrane District, Lake Nipissing, Bruce and Lambton counties, and Haldimand-Norfolk RM.

Ruddy Duck

Two breeding localities were reported from northern Ontario: Little Missinaibi Lake in Sudbury District, and Englehart in Timiskaming District. Elgin and Leeds counties also had breeding reports.

Turkey Vulture

Additional reports of nesting have come from Brant, Hastings, Renfrew, and Simcoe counties, from Solitary Lake in Kenora District, and from Manitoulin Island.

Osprey

Nesting reports were new from the Winisk River at 53°07'N, 53°18'N, 53°34'N, and 54°18'N; Lake Superior Provincial Park; Tweed Lake in Cochrane District; and south of Gogama in Sudbury District.

Northern Harrier (Marsh Hawk)

In Volume 1, the first two lines of paragraph 3 should be deleted and replaced with “Nests were scanty to bulky platforms or mounds, usually with flat tops. They were placed on the ground or on surrounding flattened vegetation. A few nests were described as. . . .” A 1986 nest record from Parry Sound District was reported.

Cooper's Hawk

New areas reporting breeding include Peterborough, Oxford, and Victoria counties.

Northern Goshawk (Goshawk)

Breeding reports have been received from Kiruna Lake in Kenora District, from just northwest of Armstrong in Thunder Bay District, from The Shoals Provincial Park in Sudbury District, and from Hastings, Huron, Northumberland, Prescott, and Victoria counties.

Red-shouldered Hawk

An additional breeding record came from Manitoulin District.

Broad-winged Hawk

New reports came from Markstay in Sudbury District; Bruce, Dufferin, Grey, Prescott, and Renfrew counties; and York RM.

Swainson's Hawk, *Buteo swainsoni* Bonaparte

In the summer of 1983, a nest was reported from Rushing River Provincial Park near Kenora in Kenora District. However, as far as we are aware, no material evidence was preserved for this first reported nesting in the province. This species thus has not been accorded full breeding status.

Red-tailed Hawk

There were new records from the Winisk River at 54°11'N, in Kenora District; from Trilsbeck Lake and Cheepash River, both in Cochrane District; and from Prince Edward, Stormont, and Victoria counties.

American Kestrel

A nest was reported at Winisk on the Hudson Bay coast, in Kenora District, extending the northern range by several hundred kilometres. Because the nest was in a building, human activity may have assisted in this range extension. Nesting or breeding reports were also received from Ivanhoe Lake and Capreol,

both in Sudbury District, and from Parry Sound District.

Merlin

Additional nesting reports were from the Winisk River at 54°42'N, 86°08'W, in Kenora District; from Nagagamis Provincial Park in Algoma District; and from Martin River in Nipissing District.

Peregrine Falcon

After an absence of 20 years as a breeding bird of Ontario, a pair raised at least 2 young in Renfrew County in 1983. Unfortunately the female was shot shortly after the young left the nest, and the ultimate fate of the young was unknown.

Ring-necked Pheasant

A breeding was reported from Lennox and Addington County.

Spruce Grouse

New breeding sites were Kiruna Lake in Kenora District, on the Little Abitibi River at 49°59'N in Cochrane District, and near Sudbury in Sudbury District.

Ruffed Grouse

There were new records from near the mouth of the Harricanaw River in Cochrane District, and from the city of Sudbury in Sudbury District. There is as yet no record from Prescott County as shown in Volume 1.

Sharp-tailed Grouse, *Tympanuchus phasianellus* (Linnaeus)

New reports of breeding came from Winisk and Kenora, both in Kenora District, and from Twin Falls on the Albany River south of Cochrane in Cochrane District.

Wild Turkey

A release of birds on Great Cloche Island in Manitoulin District apparently resulted in successful breeding in 1981 (Goodwin, 1981). Birds were also released in Haldimand-Norfolk RM and southern Lennox and Addington County in 1984 and 1985 in an effort to re-establish the species in Ontario. Several nests or broods were reported from these releases.

Yellow Rail

Breeding reports from Ottawa-Carleton RM, and from North Point on James Bay in Cochrane District were new.

Virginia Rail

Renfrew and Lennox and Addington counties now have nesting records.

Sora

New breeding records were from North Point on James Bay in Cochrane District, from Bruce County, and from southern Nipissing District.

Common Moorhen (Common Gallinule)

We now have a breeding record from Waterloo RM.

American Coot

Oxford County now has a nesting record, and Russell County, a breeding record.

Sandhill Crane

We have new breeding records from near the mouth of the Opinnagau River in Kenora District; from the mouth of the Opistokwayan River, Netitishi Point, the mouth of the Missisicabi River in southern James

Bay, and the Cochrane area, all in Cochrane District; from several sites between Echo Bay and Thessalon in southern Algoma District; and from Bruce County.

Semipalmated Plover

New locations for breeding were from the Severn River just south of Fort Severn, and from the Fawn River just prior to its joining the Severn River, both in Kenora District.

Greater Yellowlegs

Breeding has also been confirmed at Kiruna Lake in Kenora District, and a possible breeding report has come from the east-central side of Lake Nipigon (North Wind Lake) in Thunder Bay District.

Lesser Yellowlegs

A breeding location was reported from Big Piskwanish Point on James Bay.

Solitary Sandpiper

New breeding locations included a point 8 km (5 mi) west of Klotz Lake Provincial Park and the northern part of Pukaskwa National Park, both in Thunder Bay District, and the Sudbury area and Vrooman Township, both in Sudbury District.

Spotted Sandpiper

New reports of breeding were from the Severn River just south of Fort Severn, from near Bearskin Lake, from the Fawn River at two locations along the lower third of the river, and from site 415 in the Cape Henrietta Maria region, all in Kenora District; and from near the mouth of the Harricanaw River in southern James Bay in Cochrane District.

Upland Sandpiper

Bruce, Dufferin, Kent, and Renfrew counties now have breeding or nesting records.

Whimbrel

Breeding has been reported from Partridge Island near Fort Severn in Kenora District.

Least Sandpiper

Breeding was reported on the Severn River, about 160 km (100 mi) inland from the Hudson Bay coast, in Kenora District.

Dunlin

Partridge Island near Fort Severn in Kenora District, was the site of a new breeding record.

Short-billed Dowitcher

Breeding was confirmed on Akimiski Island in James Bay, NWT, but not yet in Ontario.

Common Snipe, *Gallinago gallinago* (Linnaeus)

New breeding locations included Kiruna Lake and near site 415 at Cape Henrietta Maria region, both in Kenora District; Moosonee in Cochrane District; east of Markstay in Sudbury District; and in Grenville and Northumberland counties.

American Woodcock, *Scolopax minor* Gmelin

Additional records were from northeastern Lake Abitibi in Cochrane District, Hanmer in Sudbury District, North Bay in Nipissing District, Lanark and Lennox and Addington counties, and Haliburton District.

Wilson's Phalarope, *Phalaropus tricolor* (Vieillot)

Sudbury (Kelly Lake) in Sudbury District and Russell County were additional breeding locations for this

species. Birds were also reported from northwestern Ontario, suggesting breeding there.

Red-necked Phalarope, *Phalaropus lobatus* (Linnaeus) (Northern Phalarope)

Two nests, each with 4 eggs, were found in 1985 on Cape Henrietta Maria in Kenora District.

Little Gull

During the summer of 1984 a small colony of 8 birds with at least 1 nest was found about 20 km (12 mi) south of Attawapiskat in Kenora District. Flying young were also noted on the Winisk River in Kenora District, in July, indicating that there were probably other colonies in the vast Hudson Bay Lowland area.

Bonaparte's Gull

Tweed Lake area in Cochrane District was the site of another nest record.

Ring-billed Gull

The location of new colonies included Burton Island in Lake-of-the-Woods, and North Caribou and Bearskin lakes, all in Kenora District; an island in Lake Huron's north channel off Thessalon in Algoma District; Kent County; and Durham RM.

California Gull, *Larus californicus* Lawrence

In 1981 and 1982 a lone adult, presumably a female, was found sitting on eggs in Tommy Thompson Park (Leslie Street Landfill site) in Toronto's outer harbour. The bird was present from 14 to 29 May in 1981 with 2 eggs, and from 19 May to 2 June 1982 on a single egg. In neither attempt did any young hatch. The nests were simple scrapes with a few weed stems, in a large Ring-billed Gull colony.

Herring Gull

Nest records were received from Pierre Lake in Cochrane District, and from Durham RM and Kent County.

Great Black-backed Gull

A nest record has come from Metropolitan Toronto RM.

Caspian Tern

New colonies were reported from Lambton County and from Hamilton-Wentworth RM.

Common Tern

New colonies were reported from Quetico Provincial Park in Rainy River District; near Armstrong in Thunder Bay District; an island in the Moose River near Moosonee, an island off Netitishi Point in James Bay, and an island in Pierre Lake, all in Cochrane District; Batchawana Bay in Algoma District; and Prescott County.

Arctic Tern

An island in the Severn River in Kenora District, about 50 km (30 mi) inland from Hudson Bay, was the location of another colony.

Forster's Tern

A colony of ca 30 nests was reported from Rondeau Provincial Park in Kent County.

Black Tern

We now have a record from southern Nipissing District.

Mourning Dove

A new nest record was received from Haileybury in Timiskaming District. Summer sightings also

suggest breeding at Moosonee.

Black-billed Cuckoo

A nest record is now available from Hastings County.

Eastern Screech-Owl (Screech Owl)

We now have a nest record from Peterborough County.

Northern Hawk-Owl (Hawk Owl)

Two family groups and a nest with young were located near Kiruna Lake in Kenora District in 1981, verifying the occurrence of this species throughout the forested portions of northern Ontario. The nest was a depression of 8 cm (3 inches) depth on the top of a broken-off spruce tree 2 m (6.6 ft) high. This stub was 24 cm (9 inches) wide at the nest, and was right at the edge of a river in short and open black spruce forest.

Barred Owl

Breeding was reported from Bruce County, Muskoka DM, and York RM.

Great Gray Owl

Additional nesting and breeding records were from Atikokan in Rainy River District, and Manitouwadge in Thunder Bay District. Fledged young were also seen in Sudbury District in 1981, about 30 km (18 mi) south of Gogama.

Long-eared Owl

In 1981 a nest was located at Kiruna Lake in Kenora District (James et al., 1983). As a result of this record and other sightings of birds, it seems likely that this species breeds throughout the forested portions of northern Ontario. The nest at Kiruna Lake was located in a growth of dwarf mistletoe adjacent to the trunk of a black spruce. Nest records have come from near Sudbury in Sudbury District, and from Victoria County.

Short-eared Owl

A breeding record came from Prince Edward County.

Boreal Owl

The second nest record for Ontario came from the Atikokan area in Rainy River District.

Northern Saw-whet Owl (Saw-whet Owl)

A breeding record has been received from Hamilton-Wentworth RM.

Whip-poor-will

New nest records were received from Hastings and Lanark counties.

Chimney Swift

Grey and Stormont counties now have nest records.

Ruby-throated Hummingbird

New nest records were from Hastings and Perth counties.

Belted Kingfisher

Nesting records have come from Little Sachigo Lake and the Sachigo River near Whitefish Lake, both in Kenora District; the Harricanaw River near its mouth and Tweed Lake area, both in Cochrane District; Manitouwadge in Thunder Bay District; and Notre Dame du Lac in northern Nipissing District.

Red-headed Woodpecker

A nest was reported from Renfrew County.

Red-bellied Woodpecker

In 1983 a pair was seen at a nest hole in southern Prince Edward County over a period of 8 days in mid-May. Although the nest was not subsequently checked, it seems likely that nesting was attempted there (Weir, 1983). Nests were also reported from Kent County, Durham RM, Haldimand-Norfolk RM, and Niagara RM.

Yellow-bellied Sapsucker

A 1986 nest record from Grey County was reported.

Downy Woodpecker

New nesting records came from Anjigami in Algoma District, from Waldie Township in Sudbury District, and from Waterloo RM.

Hairy Woodpecker

Nesting records have been received from the Harricanaw River in Cochrane District; from Noelville and just west of Sudbury, both in Sudbury District; and from Huron County.

Three-toed Woodpecker (Northern Three-toed Woodpecker)

In northern Ontario nesting and breeding records have been received from Kiruna Lake in Kenora District, Wabakimi Lake in Thunder Bay District, Wakami Lake Provincial Park in Sudbury District, and New Liskeard in Timiskaming District. Records have also come from Nipissing and Haliburton districts, and from Frontenac County. The breeding range of this species therefore appears to extend south almost to Kingston, but numbers are probably few and irregular, and are restricted to areas on the Canadian Shield in southern Ontario.

Black-backed Woodpecker (Black-backed Three-toed Woodpecker)

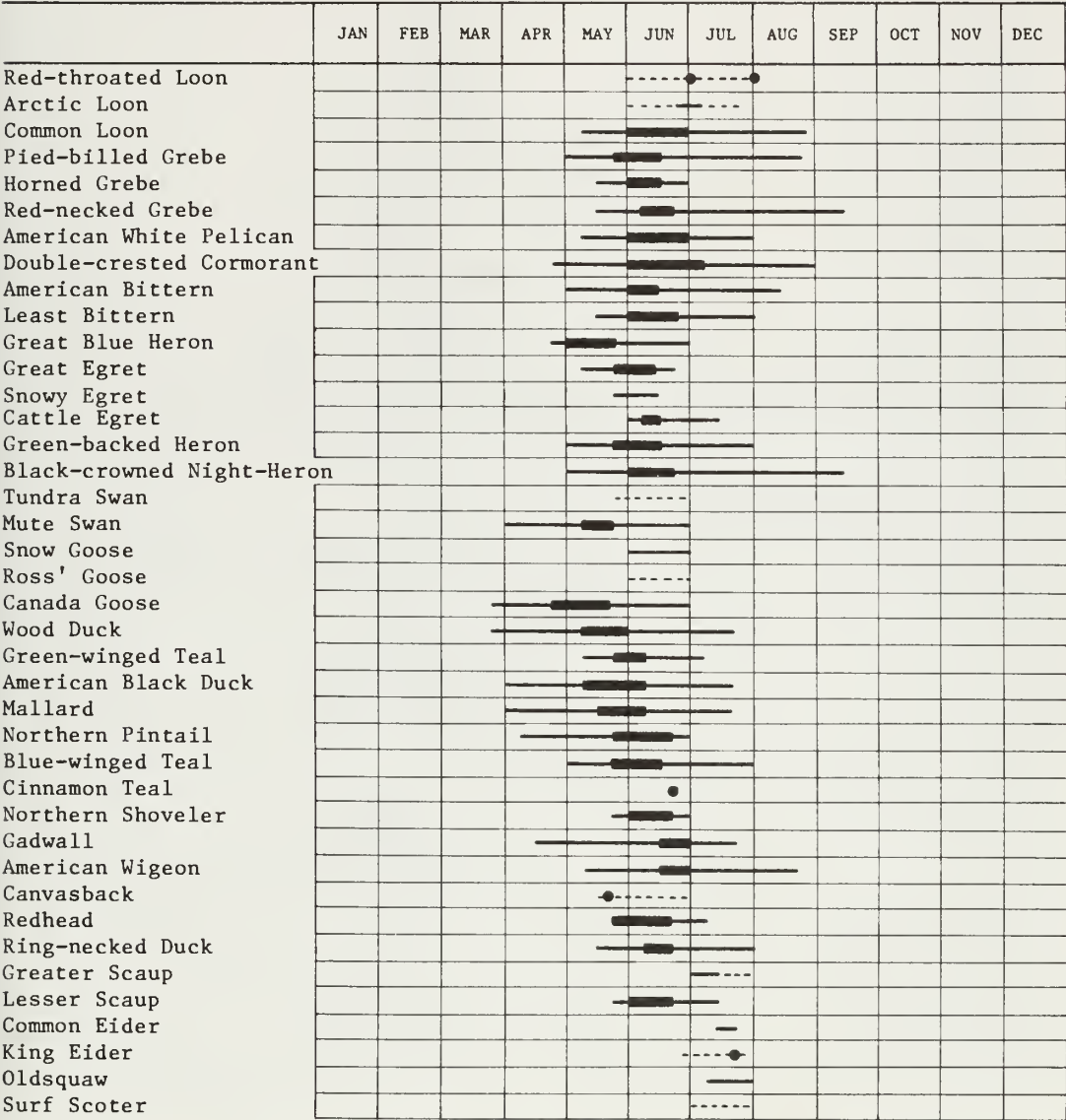
We have additional nesting records from Kiruna Lake in Kenora District, from 24 km (15 mi) southeast of Wawa in Algoma District, and from Gogama in Sudbury District, and a southern extension of its breeding range into Peterborough County.

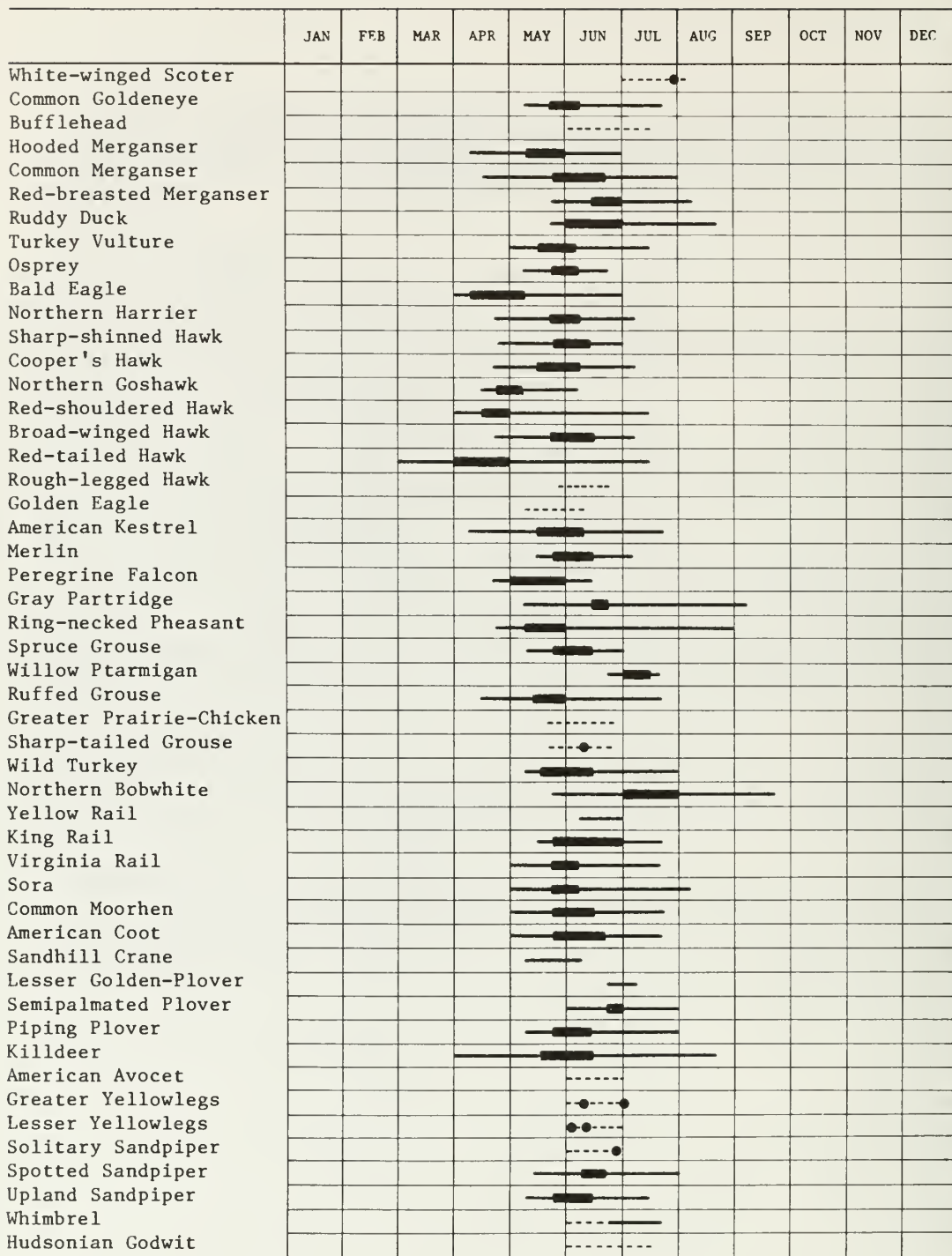
Northern Flicker (Common Flicker)

New nest records have been received from Barksin Lake in Kenora District, Garrett Lake in Kenora District, Armstrong in Thunder Bay District, extreme northern Algoma District (on Hwy 631), and the Harricanaw River in Cochrane District.

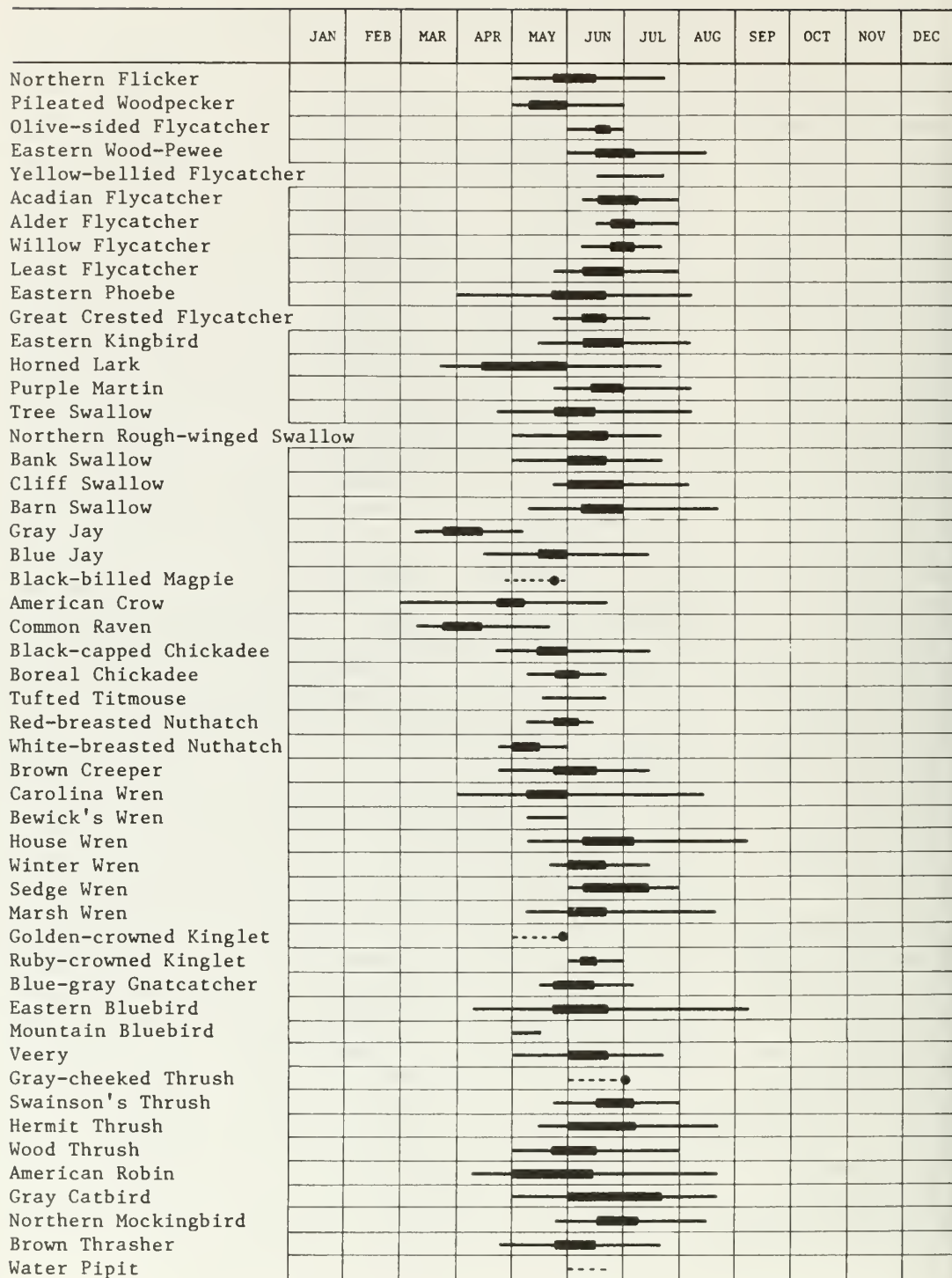
Appendix B

List of the breeding birds of Ontario, with the dates on which eggs have been recorded in nests. The narrow line gives the range of dates, and the wide line gives the height of the season (middle 50%). Isolated records appear as dots. For species with few or no recorded egg dates, a broken line indicates a conservative estimate of the probable month(s) of nesting, based on observations of young birds or birds building nests.





	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Marbled Godwit						-----●						
Semipalmated Sandpiper						-----						
Least Sandpiper						-----						
Pectoral Sandpiper						-----						
Dunlin						-----						
Stilt Sandpiper						-----						
Common Snipe					-----	-----						
American Woodcock				-----	-----	-----						
Wilson's Phalarope					-----	-----						
Red-necked Phalarope						-----						
Parasitic Jaeger						-----●						
Little Gull						-----						
Bonaparte's Gull						-----						
Ring-billed Gull						-----						
California Gull						-----						
Herring Gull						-----						
Great Black-backed Gull						-----						
Caspian Tern						-----						
Common Tern						-----						
Arctic Tern						-----						
Forster's Tern						-----						
Black Tern						-----						
Black Guillemot						-----						
Rock Dove						-----						
Mourning Dove						-----						
Black-billed Cuckoo						-----						
Yellow-billed Cuckoo						-----						
Common Barn-Owl						-----						
Eastern Screech-Owl						-----						
Great Horned Owl						-----						
Northern Hawk-Owl						-----						
Barred Owl						-----						
Great Gray Owl						-----						
Long-eared Owl						-----						
Short-eared Owl						-----						
Boreal Owl						-----						
Northern Saw-whet Owl						-----						
Common Nighthawk						-----						
Chuck-will's-widow						-----●						
Whip-poor-will						-----						
Chimney Swift						-----						
Ruby-throated Hummingbird						-----						
Belted Kingfisher						-----						
Red-headed Woodpecker						-----						
Red-bellied Woodpecker						-----						
Yellow-bellied Sapsucker						-----						
Downy Woodpecker						-----						
Hairy Woodpecker						-----						
Three-toed Woodpecker						-----						
Black-backed Woodpecker						-----						



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Bohemian Waxwing						-----						
Cedar Waxwing						=====						
Northern Shrike						-----						
Loggerhead Shrike						=====						
European Starling						=====						
White-eyed Vireo						-----						
Solitary Vireo						=====						
Yellow-throated Vireo						=====						
Warbling Vireo						=====						
Philadelphia Vireo						=====						
Red-eyed Vireo						=====						
Blue-winged Warbler						-----						
Golden-winged Warbler						=====						
Tennessee Warbler						=====						
Orange-crowned Warbler						-----						
Nashville Warbler						=====						
Northern Parula						-----						
Yellow Warbler						=====						
Chestnut-sided Warbler						=====						
Magnolia Warbler						=====						
Cape May Warbler						-----						
Black-throated Blue Warbler						=====						
Yellow-rumped Warbler						=====						
Black-throated Green Warbler						=====						
Blackburnian Warbler						=====						
Pine Warbler						=====						
Prairie Warbler						=====						
Palm Warbler						=====						
Bay-breasted Warbler						=====						
Blackpoll Warbler						=====						
Cerulean Warbler						=====						
Black-and-white Warbler						=====						
American Redstart						=====						
Prothonotary Warbler						=====						
Ovenbird						=====						
Northern Waterthrush						=====						
Louisiana Waterthrush						=====						
Connecticut Warbler						-----						
Mourning Warbler						=====						
Common Yellowthroat						=====						
Hooded Warbler						=====						
Wilson's Warbler						=====						
Canada Warbler						=====						
Yellow-breasted Chat						=====						
Scarlet Tanager						=====						
Northern Cardinal						=====						
Rose-breasted Grosbeak						=====						
Indigo Bunting						=====						
Dickcissel						=====						
Rufous-sided Towhee						=====						

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
American Tree Sparrow												
Chipping Sparrow												
Clay-coloured Sparrow												
Field Sparrow												
Vesper Sparrow												
Lark Sparrow												
Savannah Sparrow												
Grasshopper Sparrow												
Henslow's Sparrow												
Le Conte's Sparrow												
Sharp-tailed Sparrow												
Fox Sparrow												
Song Sparrow												
Lincoln's Sparrow												
Swamp Sparrow												
White-throated Sparrow												
White-crowned Sparrow												
Harris' Sparrow												
Dark-eyed Junco												
Lapland Longspur												
Smith's Longspur												
Bobolink												
Red-winged Blackbird												
Eastern Meadowlark												
Western Meadowlark												
Yellow-headed Blackbird												
Rusty Blackbird												
Brewer's Blackbird												
Common Grackle												
Brown-headed Cowbird												
Orchard Oriole												
Northern Oriole												
Purple Finch												
House Finch												
Red Crossbill												
White-winged Crossbill												
Common Redpoll												
Pine Siskin												
American Goldfinch												
Evening Grosbeak												
House Sparrow												

Plant Species Mentioned in the Text

Acacia	<i>Acacia</i>	Hazel	<i>Corylus</i>
Alder	<i>Alnus</i>	beaked	<i>C. cornuta</i>
Apple	<i>Malus</i>	Heath	ERICACEAE
Ash	<i>Fraxinus</i>	Hemlock	<i>Tsuga canadensis</i>
black	<i>F. nigra</i>	Honeysuckle	<i>Lonicera</i>
Aspen	<i>Populus</i>	Horsetail	<i>Equisetum</i>
trembling	<i>P. tremuloides</i>	Ivy	
Basswood	<i>Tilia americana</i>	poison	<i>Rhus radicans</i>
Beech	<i>Fagus grandifolia</i>	Juniper	<i>Juniperus</i>
Birch	<i>Betula</i>	Labrador tea	<i>Ledum groenlandicum</i>
dwarf (also bog/swamp)	<i>B. pumila</i>	Leatherleaf	<i>Chamaedaphne calyculata</i>
white	<i>B. papyrifera</i>	Lichen	LICHENES
yellow	<i>B. alleghaniensis</i>	reindeer	<i>Cladonia rangiferina</i>
Blackberry	<i>Rubus</i>	usnea	<i>Usnea</i>
Blueberry	<i>Vaccinium angustifolium</i>	Lilac	<i>Syringa vulgaris</i>
Bulrush	<i>Scirpus</i>	Loosestrife	<i>Lythrum</i>
Bunchberry	<i>Cornus canadensis</i>	Maple	<i>Acer</i>
Bur-reed	<i>Sparganium</i>	Manitoba	<i>A. negundo</i>
Buttonbush	<i>Cephalanthus occidentalis</i>	red	<i>A. rubrum</i>
Cabbage		silver	<i>A. saccharinum</i>
skunk	<i>Symplocarpus foetidus</i>	Milkweed	Asclepiadaceae
Cattail	<i>Typha</i>	Mistletoe	
Cedar		dwarf	<i>Arceuthobium pusillus</i>
white	<i>Thuja occidentalis</i>	Mock orange	<i>Philadelphus</i>
Cherry	<i>Prunus</i>	Moss	MUSCI
chokecherry	<i>P. virginiana</i>	sphagnum	<i>Sphagnum</i>
pincherry	<i>P. pensylvanica</i>	Oak	<i>Quercus</i>
Chestnut	<i>Castanea</i> or <i>Aesculus</i>	white	<i>Q. alba</i>
Clover		Pine	<i>Pinus</i>
red	<i>Trifolium pratense</i>	jack	<i>P. banksiana</i>
Clubmoss	<i>Lycopodium</i>	red	<i>P. resinosa</i>
tree	<i>L. obscurum</i> or <i>L. dendroidium</i>	white	<i>P. strobus</i>
Coltsfoot		Poplar	<i>Populus</i>
sweet	<i>Petasites sagittatus</i>	balsam	<i>P. balsamifera</i>
Corn	<i>Zea mays</i>	Raspberry	<i>Rubus</i>
Dandelion	<i>Traxacum</i>	Rhododendron	<i>Rhododendron</i>
Dogwood	<i>Cornus</i>	Rice	
gray	<i>C. racemosa</i>	wild	<i>Zizania aquatica</i>
Elm	<i>Ulmus</i>	Rose	<i>Rosa</i>
Fern	FILICALES	Rush	<i>Juncus</i>
bracken	<i>Pteridium aquilinum</i>	Sedge	CYPERACEAE
Fir	<i>Abies</i>		<i>Carex</i>
balsam	<i>A. balsamea</i>	Sheep laurel	<i>Kalmia angustifolia</i>
Goldenrod	<i>Solidago</i>	Spiraea	<i>Spiraea</i>
Grape	<i>Vitis</i>	Spruce	<i>Picea</i>
Grass	GRAMINEAE	black	<i>P. mariana</i>
bluejoint	<i>Calamagrostis canadensis</i>	white	<i>P. glauca</i>
common reed	<i>Phragmites communis</i>	Strawberry	<i>Fragaria</i>
timothy	<i>Phleum</i>	Sumac	<i>Rhus</i>
Hawthorn	<i>Crataegus</i>	fragrant	<i>R. aromatica</i>

Sunflower *Helianthus*
Swamp laurel *Kalmia polifolia*
Tamarack *Larix laricina*
Thistle *Cirsium*, *Centaurea*, or *Cardus*
Vetch *Vicia*
 purple *V. benghalensis*
Viburnum *Viburnum*
 maple-leaved *V. acerifolium*

Willow *Salix*
 arctic *S. arctica*
 net-veined (dwarf) *S. reticulata*
Yew
 American *Taxus canadensis*

Literature Cited

- ALLIN, A. E. and L. S. DEAR
1947 Brewer's Blackbird breeding in Ontario. *Wilson Bulletin* 59:175-176.
- AMERICAN ORNITHOLOGISTS' UNION
1973 Thirty-second supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 90:411-419.
1983 Check-list of North American birds. 6th ed. Washington, D.C., American Ornithologists' Union. 877 pp.
1985 Thirty-fifth supplement to the American Ornithologists' Union check-list of North American birds. *Auk* 102:680-686.
- BAILLIE, J. L.
1947 The Double-crested Cormorant nesting in Ontario. *Canadian Field-Naturalist* 61:119-126.
1950 The fall migration. *Audubon Field Notes* 4:14.
1958 Six old yet new Ontario breeding birds. *Ontario Field Biologist* 12:1-7.
1960 New Ontario breeding birds. *Ontario Field Biologist* 14:14-23.
1961 More new Ontario breeding birds. *Ontario Field Biologist* 15:1-9.
1962 Fourteen additional Ontario breeding birds. *Ontario Field Biologist* 16:1-15.
1963 The 13 most recent Ontario nesting birds. *Ontario Field Biologist* 17:15-26.
- BAILLIE, J. L. and P. HARRINGTON
1936 The distribution of breeding birds in Ontario. Part I. *Transactions of the Royal Canadian Institute* 21:1-50.
1937 The distribution of breeding birds in Ontario. Part II. *Transactions of the Royal Canadian Institute* 21:199-283.
- BEARDSLEE, C. S. and H. D. MITCHELL
1965 Birds of the Niagara Frontier region. *Bulletin of the Buffalo Society of Natural Sciences* 22:1-478.
- CADMAN, M. D., P. F. J. EAGLES, and F. HELLEINER
in prep. Atlas of the breeding birds of Ontario. Waterloo, University of Waterloo Press.
- DEAR, L. S.
1940 Breeding birds of the region of Thunder Bay, Lake Superior, Ontario. *Transactions of the Royal Canadian Institute* 23:119-143.
- DENIS, K.
1958 Yellow-headed Blackbird in Thunder Bay District, Ontario. *Thunder Bay Field Naturalists Club Newsletter* 12:48.
- DEVITT, O. E.
1938 Leconte's Sparrow in southern Ontario. *Auk* 55:283-284.
- FARGO, W. G. and M. B. TRAUTMAN
1930 Late summer bird notes along the upper Michipicoten River, Ontario. *Canadian Field-Naturalist* 44:30-33.
- FORSTER, J. R.
1772 An account of the birds sent from Hudson's Bay; with observations relative to their natural history; and Latin descriptions of some of the most uncommon. *Philosophical Transactions of the Royal Society* 62:382-433.
- FRIEDMANN, H.
1963 Host relations of the parasitic cowbirds. *United States National Museum Bulletin* 233:1-276.
- FRIEDMANN, H., L. F. KIFF, and S. I. ROTHSTEIN
1977 A further contribution to knowledge of the host relations of the parasitic cowbirds. *Smithsonian Contributions to Zoology* 235:1-75.
- GLEASON, H. A. and A. CRONQUIST
1963 *Manual of vascular plants of Northeastern United States and adjacent Canada*. Princeton,

- Van Nostrand. 810 pp.
- GODFREY, W. E.
1966 The birds of Canada. National Museum of Canada, Bulletin 203:1-428.
- GOODWIN, C. E.
1981 The nesting season. *American Birds* 35:934-936.
- GUNN, W. W. H.
1956 The nesting season. *Audubon Field Notes* 10:381-383.
1958 The nesting season. *Audubon Field Notes* 12:408-410.
- HARRINGTON, P.
1939 Kirtland's Warbler in Ontario. *Jack-Pine Warbler* 17:95-97.
- HENRY, A.
1809 Travels and adventures in Canada and the Indian territories between the years 1760 and 1776. In two parts. New York, I. Riley. 245 pp.
- JAMES, E.
1956 A narrative of the captivity and adventures of John Tanner during thirty years residence among the Indians in the interior of North America. [Reprint of the 1830 ed.] Minneapolis, Ross and Haines. 428 pp.
- JAMES, R. D.
1978 Nesting of the House Finch in Ontario. *Ontario Field Biologist* 32(2):30-31.
1981 Northern Shrike confirmed as a breeding species in Ontario. *Ontario Field Biologist* 35:93-94.
1984 The breeding bird list for Ontario: additions and comments. *Ontario Birds* 2:24-29.
- JAMES, R. D., J. A. DICK, S. V. NASH, M. K. PECK, and B. E. TOMLINSON
1983 Avian breeding and occurrence records from the Sutton Ridges of northern Ontario. *Canadian Field-Naturalist* 97:187-193.
- KELLEY, A. H., D. S. MIDDLETON, and W. P. NICKELL
1963 Birds of the Detroit-Windsor area. Bloomfield Hills, Michigan, Cranbrook Institute of Science. 119 pp.
- LAMEY, J.
1981 Unusual records of birds for Ontario's Rainy River District. *Ontario Bird Banding* 14:38-42.
- LANE, J.
1969 Hybridism in the eastern and mountain bluebirds. *Blue Jay* 27:18-21.
- LONCKE, D. J. and J. B. FALLS
1973 An attempted third brood in the White-throated Sparrow. *Auk* 90:904.
- LUMSDEN, H. G.
1984 The pre-settlement breeding distribution of Trumpeter, *Cygnus buccinator*, and Tundra Swans, *C. columbianus*, in eastern Canada. *Canadian Field-Naturalist* 98:415-424.
- MacFAYDEN, C. J.
1945 Breeding of *Tyrannus verticalis* in Ontario. *Canadian Field-Naturalist* 59:67.
- MACOUN, J. and J. M. MACOUN
1909 Catalogue of Canadian birds. Ottawa, Canada Department of Mines, Geological Survey Branch. 761 pp.
- MANNING, T. H.
1952 Birds of the west James Bay and southern Hudson Bay coasts. National Museum of Canada, Bulletin 125:1-114.
1981 Birds of the Twin Islands, James Bay, NWT, Canada. *Syllogeus* 30:1-50.
- MCCRACKEN, J. D., M. S. W. BRADSTREET, and G. L. HOLROYD
1981 Breeding birds of Long Point, Lake Erie: a study in community succession. Canadian Wildlife Service, Report Series 44:1-72.
- MORDEN, J. A. and W. E. SAUNDERS
1882 List of the birds of western Ontario. *Canadian Sportsman and Naturalist* 2:183-187, 192-194.

- NICE, M. M.
1953 The question of ten-day incubation periods. *Wilson Bulletin* 65:81–83.
- PECK, G. K.
1972 Birds of the Cape Henrietta Maria region, Ontario. *Canadian Field-Naturalist* 86:333–348.
1973 Nesting of the Evening Grosbeak (*Hesperiphona vespertina*) in Ontario. *Ontario Field Biologist* 27:38–40.
1976 Recent revisions to the list of Ontario's breeding birds. *Ontario Field Biologist* 30(2):9–16.
- PECK, G. K. and R. D. JAMES
1983 Breeding birds of Ontario: nidiology and distribution. Volume 1: Nonpasserines. Life Sciences Miscellaneous Publications. Toronto, Royal Ontario Museum. 321 pp.
- PETERSEN, A. J.
1955 The breeding cycle in the Bank Swallow. *Wilson Bulletin* 67:235–286.
- PREBLE, E. A.
1902 A biological investigation of the Hudson Bay Region. North American Fauna No. 22. Washington, United States Dept. of Agriculture, Division of Biological Survey. 140 pp.
- PUTNAM, L. S.
1949 The life history of the Cedar Waxwing. *Wilson Bulletin* 61:141–182.
- ROSS, R. K. and N. R. NORTH
1983 Breeding records of Northern Shoveler, *Anas clypeata*, along the northern coast of Ontario. *Canadian Field-Naturalist* 97:113.
- ROTHSTEIN, S. I.
1975 An experimental and teleonomic investigation of avian brood parasitism. *Condor* 77:250–271.
- RYDER, J. P., P. L. RYDER, and B. TERMAAT
1983 Newly discovered Ring-billed Gull colonies in Lake-of-the-Woods. *Loon* 55:156–157.
- SALT, W. R.
1966 A nesting study of *Spizella pallida*. *Auk* 83:274–281.
- SAUNDERS, W. E. and E. M. S. DALE
1933 History and list of birds in Middlesex County, Ontario. *Transactions of the Royal Canadian Institute* 19:161–248.
- SCHUELER, F. W., D. H. BALDWIN, and J. D. RISING
1974 The status of birds at selected sites in northern Ontario. *Canadian Field-Naturalist* 88:141–150.
- SMITH, W. J.
1957 Birds of the Clay Belt of northern Ontario and Quebec. *Canadian Field-Naturalist* 71:163–181.
- SNYDER, L. L.
1938 A faunal investigation of western Rainy River District, Ontario. *Transactions of the Royal Canadian Institute* 22:181–213.
1942 Summer birds of the Sault Ste Marie region, Ontario. *Transactions of the Royal Canadian Institute* 24:121–153.
1953 On eastern Empidonaces with particular reference to variation in *E. traillii*. *Contributions of the Royal Ontario Museum of Zoology and Palaeontology* 35:1–26.
- SPEIRS, D. H.
1984 The first breeding record of Kirtland's Warbler in Ontario. *Ontario Birds* 2:80–84.
- TODD, W. E. C.
1963 Birds of the Labrador Peninsula and adjacent areas. Toronto, University of Toronto Press. 819 pp.
- WEIR, R. D.
1983 The nesting season. *American Birds* 37:982–985.
1984 The nesting season. *American Birds* 38:1013–1017.

Selected Bibliography

Additional literature consulted for information on nidiology and breeding distribution.

ANONYMOUS

- 1954 Nesting records. *Prothonotary* 20:62-63.

ATKINSON, G. E.

- 1894 A summer's collecting and observations at Port Arthur, Ontario. *Biological Review of Ontario* 1:94-101.

BAILLIE, J. L.

- 1950 The nesting season. *Audubon Field Notes* 4:272-274.
1953 The nesting season. *Audubon Field Notes* 7:306-307.
1954 The nesting season. *Audubon Field Notes* 8:342-344.
1955 The nesting season. *Audubon Field Notes* 9:375-377.

BAILLIE, J. L. and C. E. HOPE

- 1943 The summer birds of the northeast shore of Lake Superior, Ontario. *Contributions of the Royal Ontario Museum of Zoology* 23:1-27.
1947 The summer birds of Sudbury District, Ontario. *Contributions of the Royal Ontario Museum of Zoology* 28:1-32.

BENT, A. C.

- 1919-68 Life histories of North American birds. *Bulletins of the United States National Museum*. [Reprinted: New York, Dover Publications.]

BRADSTREET, M. S. W. and J. D. McCracken

- 1978 Avifaunal survey of St. Lawrence Islands National Park. Cornwall, Parks Canada. 343 pp.

BREMNER, R. M.

- 1949 Observations on the birds of the Casummit-Birch lakes region of northwest Ontario. *Canadian Field-Naturalist* 63:161-165.

BREWER, A. D.

- 1977 The birds of Wellington County. Guelph, Guelph Field Naturalists Club, Special Publication. 38 pp.

BRIDGES, P.

- 1980 Observations—Oshawa area. *Naturalist* 26(5):6-7.

BROOMAN, R. C.

- 1954 The birds of Elgin County. St Thomas, Gilbert Press. 41 pp.

CRINGAN, A. T.

- 1950 Notes on the birds of the Nikip Lake area. (Unpublished report. Copy in ROM Department of Ornithology.) 19 pp.

CRINGAN, A. T., A. SALVADORI, and R. H. MANSKE

- 1971 Red Crossbill breeding in Wellington County, Ontario. *Canadian Field-Naturalist* 85:258.

DEVITT, O. E.

- 1967 The birds of Simcoe County, Ontario. Barrie, Brereton Field Naturalists Club. 192 pp.

EVANS, M. J. B.

- 1980 Nest records. *Blue Bill* 27 (Suppl.—1979 Annual Report):14-16.

FLEMING, J. H.

- 1907 Birds of Toronto, Ontario. Part 2, Land birds. *Auk* 24:71-89.

FRANCIS, J.

- 1984 Avifauna of Georgian Bay Islands National Park. Volume 2. An annotated list of the birds of the eastern sector of GBINP. Cornwall, Parks Canada. 241 pp.
1985 The birds of the Tobermory Islands unit. Cornwall, Parks Canada. 300 pp.

FRIEDMANN, H. and L. F. KIFF

- 1985 The parasitic cowbirds and their hosts. *Proceedings of the Western Foundation of Vertebrate Zoology* 2:226-302.

- GARNIER, J. H.
1882 The Red Crossbill. *Canadian Sportsman and Naturalist* 2:111-112.
- GOODWILL, J. E. V.
1942 The summer birds of the Madsen area, Patricia District, Ontario. *Canadian Field-Naturalist* 56:131-133.
- GOODWIN, C. E.
1965 The nesting season. *Audubon Field Notes* 19:537-540.
1967 The nesting season. *Audubon Field Notes* 21:561-563.
1968 The fall migration. *Audubon Field Notes* 22:31-35.
1977 The nesting season. *American Birds* 31:1131-1135.
1978 The nesting season. *American Birds* 32:1153-1156.
1981 The nesting season. *American Birds* 35:934-936.
- GUNN, J. L.
1958 Worth noting. *Federation of Ontario Naturalists Bulletin* 81:19-26.
- HAARTMAN, L. von
1969 The nesting habits of Finnish birds. I. Passeriformes. *Societas Scientiarum Fennica, Commentationes Biologicae* 32:1-187.
- HUBEL, F. C.
1907 Preliminary list of the summer birds of the Cobalt mining region, Nipissing Dist., Ontario. *Auk* 24:50.
- JAMES, R. D., S. V. NASH, and M. K. PECK
1982 A survey of bird life near the mouth of the Harricanaw River—1982. *In* A faunal study of the Hudson Bay Lowland. Field Report 1982: Harricanaw River study area, pp. 43-78. (Unpublished report. Copy in ROM Library.)
- JEHL, J. R. and B. A. SMITH
1970 Birds of the Churchill Region, Manitoba. Manitoba Museum of Man and Nature, Special Publication 1:1-87.
- KELLS, W. L.
1882 Nest hunting. *Canadian Sportsman and Naturalist* 2:151-152.
1882 Canadian oology. *Canadian Sportsman and Naturalist* 2:195-196.
1886 Nest of the Brown Creeper. *Oologist* 3:25.
1887 Nesting of the Canadian Flycatching Warbler. *Ornithologist and Oologist* 12:12-13.
1887 Nesting of the Black-throated Blue Warbler. *Ornithologist and Oologist* 12:76-77.
1889 The Crossbills. *Ornithologist and Oologist* 14:19.
1889 Nesting of the White-throated Sparrow. *Ornithologist and Oologist* 14:184-185.
1892 Nest of the Winter Wren. *Ornithologist and Oologist* 17:154-155.
1892 Nest of the Yellow-bellied Flycatcher. *Ornithologist and Oologist* 17:159.
- KELLEY, A. H.
1978 Birds of southeastern Michigan and southwestern Ontario. *Cranbrook Institute of Science, Bulletin* 57:1-99.
1983 Birds of S.E. Michigan and S.W. Ontario; notes on the years 1975-1981. *Jack-Pine Warbler* 61:3-11.
- KENDEIGH, S. C.
1947 Bird population studies in the coniferous forest biome during a spruce budworm outbreak. Ontario Dept. of Lands and Forests, *Biological Bulletin* 1:1-100.
- KLUGH, A. B.
1905 The birds of Wellington County, Ontario. *Ontario Natural Science Bulletin* 1:1-10.
- LAMBERT, A. B. and R. B. H. SMITH
1984 The status of the Prairie Warbler (*Dendroica discolor*). (Unpublished status report prepared for Wildlife Branch, Ontario Ministry of Natural Resources. Copy in Ministry of Natural Resources Library.) 318 pp.
- LEE, D.
1978 An annotated list of the birds of the Big Trout Lake area, Kenora District. *Ontario Field*

Biologist 32:17-36.

- LEMON, M.
1956 Club notes. Federation of Ontario Naturalists, Bulletin 72:35-42.
- LLOYD, H.
1923-36 The birds of Ottawa. Canadian Field-Naturalist 37:101-105, 125-127, 151-156; 38:10-16; 39:16-17; 46:123-127, 162-166; 50:143-144.
- LLOYD, H. and R. G. LANNING
1948 Observations on the birds of Renfrew County, Ontario. Canadian Field-Naturalist 62:47-65.
- LONG, R. C.
1965-72 An annotated list of the birds of Pickering Beach. Parts 1-7. Ontario Field Biologist 19:26-35; 20:25-34; 21:14-29; 22:8-24; 23:14-23; 24:19, 21-22; 26:38-45.
- LOWTHER, J. K. and J. B. FALLS
1968 White-throated Sparrow. In Bent, A. C., Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows and allies. United States National Museum Bulletin 237:1364-1392.
- MANSELL, W. C.
1948 The vertebrates of north-east Muskoka. (Unpublished report. Copy in ROM Department of Ornithology.) 174 pp.
- McGEE, M. J.
1923 Bird notes from the north shore of Lake Superior, near Gargantua, Algoma District, Ontario. Canadian Field-Naturalist 37:145-146.
- McLAREN, P. L. and M. A. McLAREN
1978 Studies of terrestrial bird populations in northwestern Ontario and northern Manitoba, June 1977. (Unpublished report by L.G.L. Ltd to the Polar Gas Project. Copy in ROM Department of Ornithology.) 159 pp.
- McRAE, R. D.
1982 Birds of Presqu'ile, Ontario. Toronto, Ministry of Natural Resources. 74 pp.
- MILLS, A.
1981 A cottager's guide to the birds of Muskoka and Parry Sound. Guelph, published by the author. 211 pp.
- MITCHELL, M. H.
1929 Summer birds of Miner's Bay and vicinity, Haliburton County, Ontario. Canadian Field-Naturalist 43:147-152.
- NICHOLSON, J. C.
1974 Birds of the Sudbury District. Sudbury, published by the author. 57 pp.
1981 The birds of Manitoulin Island and adjacent islands within Manitoulin Dist. Sudbury, published by the author. 204 pp.
- NOLAN, V., Jr
1978 The ecology and behavior of the Prairie Warbler *Dendroica discolor*. Ornithological Monographs 26. Washington, American Ornithologists' Union. 595 pp.
- PECK, G. K.
1966-84 Ontario Nest Records Scheme. Reports 3 to 18. Department of Ornithology, Royal Ontario Museum. (Mimeographed.)
- PERUNIAK, S.
1969/ The birds of the Atikokan area, Rainy River District, Ontario. Ontario Field Biologist
1971 23:35-38; 25:15-33.
- QUILLIAM, H. R.
1973 History of the birds of Kingston, Ontario. Kingston, Kingston Field Naturalists. 209 pp.
- RAINE, W.
1892 Bird nesting in north west Canada. Toronto, Hunter Rose. 197 pp.
- RICKER, W. E. and C. H. D. CLARKE
1939 Birds of the vicinity of Lake Nipissing, Ontario. Contributions of the Royal Ontario

Museum of Zoology 16:1–25.

SADLER, D.

- 1983 Our heritage of birds: Peterborough County in the Kawarthas. Peterborough, Orchid Press. 190 pp.

SANDILANDS, A. P.

- 1984 Annotated checklist of the vascular plants and vertebrates of Luther Marsh, Ontario. Ontario Field Biologist, Special Publication 2:1–134.

SAUNDERS, W. E.

- 1910 The Acadian Flycatcher in Ontario. Auk 27:209–210.

SKEEL, M. and S. BONDRUP-NIELSEN

- 1978 Avifauna survey of Pukaskwa National Park. Cornwall, Parks Canada. 259 pp.

SNYDER, L. L.

- 1928 The summer birds of Lake Nipigon. Transactions of the Royal Canadian Institute 16:251–277.
- 1930 A faunal investigation of King Township, York County, Ontario. Transactions of the Royal Canadian Institute 17:183–202.
- 1931 A faunal investigation of Long Point and vicinity, Norfolk County, Ontario. III. The birds of Long Point and vicinity. Transactions of the Royal Canadian Institute 18:139–227.
- 1941 The birds of Prince Edward County, Ontario. University of Toronto Studies, Biological Series 48:25–92.

SNYDER, L. L. and E. M. WALKER

- 1928 A faunal investigation of the Lake Abitibi region, Ontario. University of Toronto Studies, Biological Series 32:1–46.

SOPER, J. D.

- 1923 The birds of Wellington and Waterloo counties, Ontario. Auk 40:489–513.

SPEIRS, D. H. and J. M. SPEIRS

- 1947 Birds of the vicinity of North Bay, Ontario. Canadian Field-Naturalist 61:23–38.

SPEIRS, J. M.

- 1959 Worth noting. Federation of Ontario Naturalists, Bulletin 83:22–30.
- 1959 Worth noting. Federation of Ontario Naturalists, Bulletin 85:22–31.
- 1959 Worth noting. Federation of Ontario Naturalists, Bulletin 86:20–29.
- 1960 Worth noting. Federation of Ontario Naturalists, Bulletin 90:13–24.
- 1973–79 Birds of Ontario County. Toronto, Federation of Ontario Naturalists. 6 vols.
- 1985 Birds of Ontario. Toronto, Natural Heritage/Natural History. 2 vols. 1524 pp.

SPRAGUE, R. T. and R. D. WEIR

- 1984 The birds of Prince Edward County. Kingston, Kingston Field Naturalists. 190 pp.

STEPNEY, P. H. R.

- 1971 Range expansion of Brewer's Blackbird and the ecology of a new population in Ontario. M.Sc. Thesis, University of Toronto. 136 pp.

THOMPSON, S. L.

- 1922 The birds of North Bay, Ontario, and vicinity in 1904. Canadian Field-Naturalist 36:161–168.

TOBIAS, T. and R. B. EVANS

- 1980 Hemlock-cedar-pine and aspen-birch forests. American Birds 34:58–59.

TODD, W. E. C.

- 1963 Birds of the Labrador Peninsula and adjacent areas. Toronto, University of Toronto Press. 819 pp.

TOZER, R. G. and J. M. RICHARDS

- 1974 Birds of the Oshawa-Lake Scugog region, Ontario. Oshawa, published by the authors. 384 pp.

WEEKS, A. R.

- 1958 A nesting of the Hooded Warbler. Federation of Ontario Naturalists, Bulletin 80:7–9.

- WEIR, R. D.
- 1973 Summer season, June 10–September 14. *Blue Bill* 20:46–48.
 - 1980 Summer season 1980—June 1–early Sept. *Blue Bill* 27:117–119.
 - 1982 New species occurring and new breeding records in the Kingston area 1981. *Blue Bill* 29:4–5.
 - 1982 The nesting season. *American Birds* 36:970–974.
 - 1983 Summer season, June 1–July 31. *Blue Bill* 30:37–39.
 - 1983 The nesting season. *American Birds* 37:482–485.
- WEIR, R. D. and H. R. QUILLIAM
- 1980 Supplement to history of the birds of Kingston, Ontario. Kingston, Kingston Field Naturalists, Special Publication. 40 pp.
- WELSH, D. A. and D. R. FILLMAN
- 1980 The impact of forest cutting on boreal bird populations. *American Birds* 34:84–94.
- WOODFORD, J.
- 1963 The nesting season. *Audubon Field Notes* 17:457–459.
- WOODFORD, J. and J. LUNN
- 1961 The nesting season. *Audubon Field Notes* 15:464–467.
- WORMINGTON, A.
- 1982 The rare breeding birds of Point Pelee National Park—a status report, 1982 census, and recommendations for resource management. Cornwall, Parks Canada. 30 pp.
- YOUNG, C. J.
- 1904 Breeding of the Myrtle Warbler. *Oologist* 21:8.

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Selected Habitats, Nests,
and Breeding Species



Fig. 143

- Fig. 143 Dry heath-lichen tundra habitat. Lapland Longspurs and Water Pipits are found almost exclusively in this type of tundra in Ontario; Horned Larks also nest there. This scene was photographed near radar site 415, Cape Henrietta Maria region, Kenora District, 30 June 1984. (Photo by R. D. James)
- Fig. 144A Water Pipit on a nest set in a recess amid lichens, heaths, or other vegetation. (Photo by G. K. Peck)
- Fig. 144B Nest site of a Lapland Longspur amid Labrador tea and lichens near radar site 415, Cape Henrietta Maria region, 30 June 1984. (Photo by R. D. James)



Fig. 144A

Fig. 144B





Fig. 145

- Fig. 145 Wet tussock-tundra habitat. Smith's Longspurs and Savannah Sparrows nest in such areas, as well as occupying drier situations where sedges are the dominant ground cover. This habitat was photographed near radar site 415, Cape Henrietta Maria region, Kenora District, 1 July 1970. (Photo by G. K. Peck)
- Fig. 146A Female Smith's Longspur at a nest amid sedges near radar site 415, Cape Henrietta Maria region, 1 July 1970. (Photo by G. K. Peck)
- Fig. 146B Nest and eggs of Smith's Longspur near radar site 415, Cape Henrietta Maria region, 30 June 1970. (Photo by G. K. Peck)



Fig. 146A

Fig. 146B





Fig. 147

- Fig. 147 Willow thicket habitat. In tundra regions such thickets, sometimes with stunted spruces, often border ponds and sloughs or areas disturbed by man. Yellow Warblers, American Tree Sparrows, White-crowned Sparrows, and Common Redpolls frequent such areas. This photograph was taken near radar site 415, Cape Henrietta Maria region, 30 June 1984. (Photo by M. K. Peck)
- Fig. 148A Common Redpoll on a nest in a stunted spruce. This is the commonest of only a few small passerines to nest above ground in a harsh tundra environment. Nests are placed within dense clumps of vegetation and are well lined. (Photo by G. K. Peck)
- Fig. 148B Common Redpoll nest with eggs and a newly hatched young. Note the feather lining to the thickly walled nest, photographed near radar site 415, Cape Henrietta Maria region, 11 July 1984. (Photo by M. K. Peck)



Fig. 148A

Fig. 148B





Fig. 149

Fig. 150A

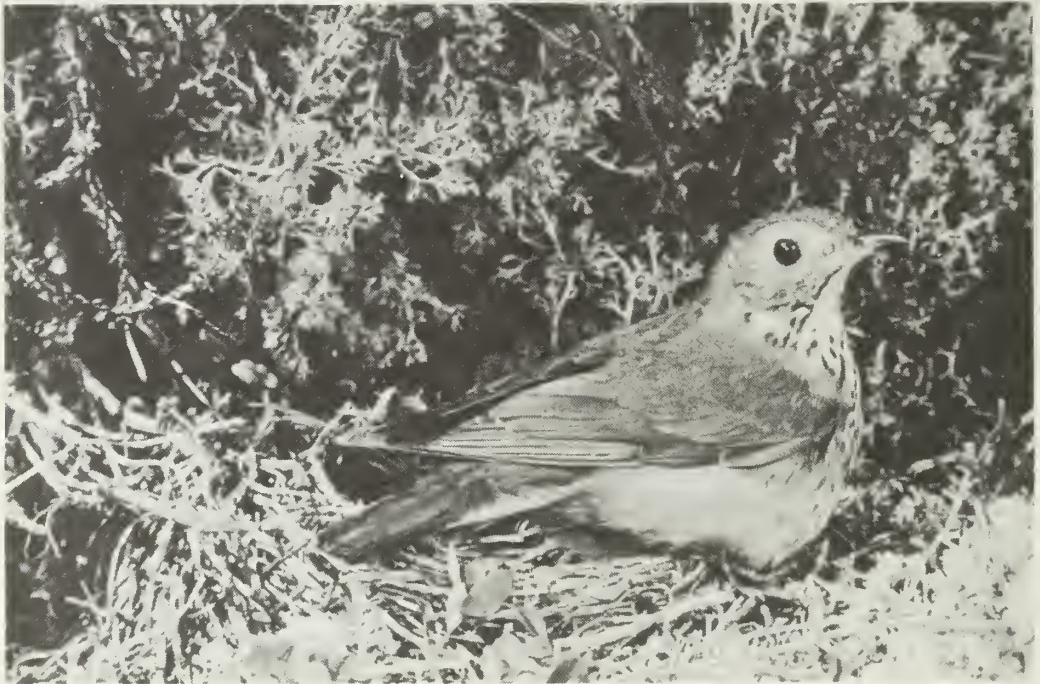




Fig. 150B

Fig. 149 Treeline habitat. The northern limit of trees, where stunted spruces give way to open tundra, is often discontinuous and is determined by such factors as temperature, prevailing winds, and ground slope or shelter. Certain birds such as Gray-cheeked Thrush and Harris' Sparrow breed mainly near the treeline in Ontario. (Photo by G. K. Peck)

Fig. 150A A Gray-cheeked Thrush at its nest. Nests were either on the ground or at low heights in trees in treeline regions. (Photo by G. K. Peck)

Fig. 150B A male Harris' Sparrow at its well-hidden nest. The first Ontario nest of this species was located amid stunted spruces at Fort Severn, Kenora District, in 1983. (Photo by G. K. Peck)



Fig. 151

Fig. 151 Lowland black spruce swamp habitat. In much of the Hudson Bay Lowland, cool climate and swampy conditions create extensive areas where coniferous trees are short and widely spaced amid pools and hummocks or clumped in "islands" between wet areas. This is the site of a Palm Warbler nest, photographed near Kiruna Lake, Kenora District, 10 July 1981. (Photo by R. D. James)

Fig. 152A The Palm Warbler which nests on the ground in spruce swamps, also occurs in more open bogs with scattered tall conifers. This bird was photographed at its nest in a bog in Thunder Bay District, 4 July 1976. (Photo by G. K. Peck)

Fig. 152B A female Blackpoll Warbler at its nest in a small black spruce. (Photo by G. K. Peck)



Fig. 152A

Fig. 152B





Fig. 153

- Fig. 153 Black spruce forest habitat. Almost uniform stands of black spruce cover huge areas of northern Ontario and provide habitat for species such as Gray Jay, Golden- and Ruby-crowned kinglets, Pine Grosbeak, and Red- and White-winged crossbills. (Photo by G. K. Peck)
- Fig. 154A Nest and eggs of Gray Jay surrounded by snow, photographed in Algonquin Provincial Park, at a height of 10 m (30 ft), 5 April 1970. (Photo by G. K. Peck)
- Fig. 154B Nest of a Ruby-crowned Kinglet with eggs and young, in a black spruce at a height of 5.5 m (18 ft), in Algonquin Provincial Park, 12 June 1971. (Photo by G. K. Peck)



Fig. 154A

Fig. 154B





Fig. 155

Fig. 155 The edges of spruce forests, often near fens and bogs or beaver ponds and rivers, where spruces of various sizes are scattered about, are a typical habitat for Olive-sided Flycatchers, Yellow-bellied Flycatchers, and Rusty Blackbirds. This Rusty Blackbird was photographed at its nest in a spruce in such a habitat. (Photo by G. K. Peck)

Fig. 156A Nest and egg of Olive-sided Flycatcher, photographed in a spruce in Hastings County, 9 June 1982. (Photo by M. K. Peck)

Fig. 156B A Yellow-bellied Flycatcher at a nest with young in a mossy hummock within a shaded portion of a black spruce bog in Quetico Provincial Park, Rainy River District, 1 July 1976. (Photo by G. K. Peck)



Fig. 156A

Fig. 156B





Fig. 157

Fig. 157 Aspen/poplar grove habitat. Throughout much of the boreal forest, as well as in more southern mixed forest, groves of trembling aspen or balsam poplar, with associated alder understory, provide important "islands" of habitat for birds such as Philadelphia Vireos, Least Flycatchers, Ovenbirds, and Red-eyed Vireos. (Photo by G. K. Peck)

Fig. 158A A Philadelphia Vireo on a nest in an aspen grove near the Harricanaw River, Cochrane District, 20 June 1982. (Photo by M. K. Peck)

Fig. 158B A Least Flycatcher photographed 8 June 1969 in Halton RM. This species ranges into the boreal forest where aspen groves are available. (Photo by G. K. Peck)



Fig. 158A

Fig. 158B





Fig. 159

Fig. 160A





Fig. 160B

- Fig. 159 Thicket swamp habitat. Dense stands of alder, willow, dogwood, dwarf birch, and sweetgale, covering extensive areas near lake and river shores or along the James Bay coastal region, provide nesting habitat for many species of small birds, depending upon height, density, and extent of cover. This photograph was taken along the Harricanaw River, Cochrane District, near James Bay, 10 July 1982. (Photo by R. D. James)
- Fig. 160A The Fox Sparrow is a northern-breeding species nesting in deciduous thickets as well as in lowland coniferous swamp. (Photo by G. K. Peck)
- Fig. 160B Nest and eggs of Swainson's Thrush in a willow shrub in tall (3–4 m [10–13 ft] high) thicket swamp among scattered spruces near the Harricanaw River, 23 June 1982. (Photo by M. K. Peck)



Fig. 161

Fig. 161 The bird pictured is a member of the "Traill's" flycatcher complex, divided into two species in 1973—the Willow and Alder flycatchers. They are distinguished on the basis of song type and nest-building behaviour among other things. The Alder Flycatcher breeds farther north, usually in wetter environments, and the Willow Flycatcher is more southern, typically found in drier habitats. (Photo by G. K. Peck)

Fig. 162A Nest and eggs of an Alder Flycatcher. The nests typically have grasses trailing below and are built low to the ground in short dense shrubs. This nest was at 0.6 m (2 ft) in a spiraea bush on Manitoulin Island, 30 June 1977. (Photo by G. K. Peck)

Fig. 162B Nest of a Willow Flycatcher. Nests are typically compact, and are higher in bushes and in more open habitats than those of the Alder Flycatcher. This nest was photographed in a hawthorn bush at a height of 1.5 m (5 ft), 1 August 1964, York RM. (Photo by G. K. Peck)



Fig. 162A



Fig. 162B



Fig. 163

- Fig. 163 Sedge marsh habitat. Such marshes are found throughout the province and provide habitat for both northern- and southern-breeding species. The marsh pictured here was in Durham RM, 10 July 1965. (Photo by G. K. Peck)
- Fig. 164A The Sharp-tailed Sparrow is a relatively rare breeding bird in Ontario and only two nests have been reported, both from the extensive sedge meadows on the west coast of James Bay. (Photo by G. K. Peck)
- Fig. 164B An adult Sedge Wren at a nest in a small colony at Shoal Point marsh, Pickering Beach, in Durham RM, 10 July 1965. This species is becoming rarer as sedge marshes disappear, particularly in southern parts of the province. (Photo by G. K. Peck)



Fig. 164A

Fig. 164B





Fig. 165

- Fig. 165 Mixed forest habitat. Such forests may attract more northern species preferring coniferous vegetation, and southern species preferring broad-leaved trees, as well as species preferring mixed woods, making such habitat the richest in bird life in the province. This is the nest site of an Evening Grosbeak in Algonquin Provincial Park. The nest was in the central white spruce at a height of 13.4 m (44 ft). (Photo by G. K. Peck)
- Fig. 166A Nest and eggs of an Evening Grosbeak, photographed 13 June 1973 in Algonquin Provincial Park. (Photo by G. K. Peck)
- Fig. 166B Magnolia Warblers usually nest in small conifers in mixed forest habitat. This male was at a nest in Algonquin Provincial Park, 5 June 1972. (Photo by G. K. Peck)



Fig. 166A

Fig. 166B





Fig. 167

- Fig. 167 Where deciduous trees and shrubs dominate woodlands of central and southern Ontario, species such as the Eastern Wood-Pewee, American Redstart, and Black-throated Blue Warbler find suitable habitat. The Eastern Wood-Pewee pictured here at a nest on 22 July 1967, in Halton RM, prefers the relatively open subcanopy of deciduous forests. (Photo by G. K. Peck)
- Fig. 168A The American Redstart occupies the shrub layers of woodlands where canopies are more open and shrub layers dense. This bird was photographed 22 July 1967 in Halton RM. (Photo by G. K. Peck)
- Fig. 168B Nest of a Black-throated Blue Warbler typically found close to the ground in low shrubs of relatively dense deciduous woodlands. This nest was photographed 13 June 1973 in Nipissing District. (Photo by G. K. Peck)



Fig. 168A

Fig. 168B





Fig. 169

Fig. 169 Juniper-scrub oak habitat. This type of vegetation, found mainly along the shores of Lake Huron, Georgian Bay, and the southern edge of the Canadian Shield, is the preferred habitat of the Prairie Warbler in Ontario. This photograph was taken near Georgian Bay, Muskoka DM, 7 June 1973. (Photo by G. K. Peck)

Fig. 170A Male Prairie Warbler bringing food to a nest with young at Go Home Bay, Georgian Bay, Muskoka District, 21 June 1974. (Photo by G. K. Peck)

Fig. 170B Female Prairie Warbler feeding young in Muskoka DM, 21 June 1974. (Photo by G. K. Peck)



Fig. 170A

Fig. 170B



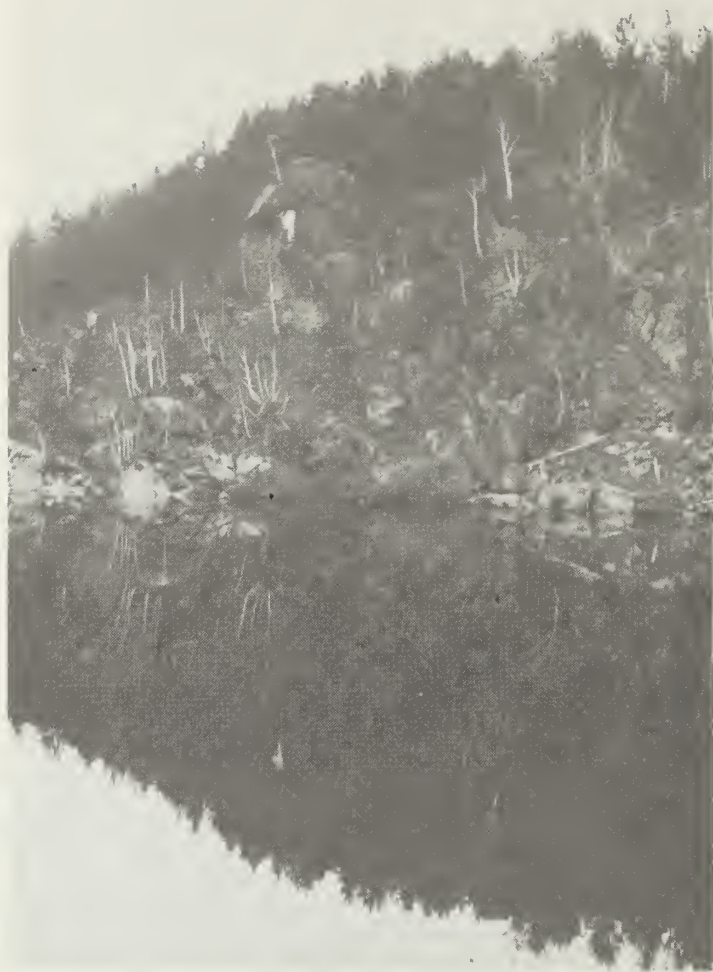


Fig. 171

- Fig. 171 Rocky cliff habitat. Cliff ledges are important nest sites for ravens, and are also used by Barn and Cliff swallows, Eastern Phoebes, and sometimes Dark-eyed Juncos and Hermit Thrushes. This is a Common Raven nest site on a rocky cliff on Costello Lake, Algonquin Provincial Park, Nipissing District, 21 May 1973. (Photo by G. K. Peck)
- Fig. 172A Common Raven adult feeding thrush eggs to large young in Algonquin Provincial Park, 21 May 1973. (Photo by G. K. Peck)
- Fig. 172B Nest and eggs of Common Raven in a nest lined with mammal hair, photographed at Fisher Lake, Algonquin Provincial Park, 4 April 1970. (Photo by G. K. Peck)



Fig. 172A

Fig. 172B





Fig. 173

- Fig. 173 Eroded bank habitat. The exposed banks along the edges of rivers, roads, and gravel pits provide nest sites for several species including Bank Swallows, Northern Rough-winged Swallows, and Eastern Phoebe. This is the nest site of a Northern Rough-winged Swallow in Halton RM, 20 May 1971. (Photo by G. K. Peck)
- Fig. 174A A Northern Rough-winged Swallow near its nest tunnel entrance in an earthen bank in Whitchurch Township, York RM, 21 May 1965. Such sites are often shared with Bank Swallows. (Photo by G. K. Peck)
- Fig. 174B Nest and eggs of a Northern Rough-winged Swallow, Whitchurch Township, York RM, 13 June 1965. Nests of this species are much more substantial, and clutch sizes average larger than those of Bank Swallow. (Photo by G. K. Peck)



Fig. 174A

Fig. 174B





Fig. 175

- Fig. 175 Dead-tree nesting sites. Abandoned woodpecker holes, natural cavities, and crevices or cavities excavated in dead trees or snags are important nesting sites for more than a dozen species of passerines in Ontario. The Eastern Bluebird, pictured here at a birch stub in Halton RM, 3 June 1968, has relied heavily on manmade nesting boxes in recent years. (Photo by G. K. Peck)
- Fig. 176A A Red-breasted Nuthatch at a nest cavity in a dead spruce stub. This species typically applies conifer pitch to the entrance of the nest. (Photo by G. K. Peck)
- Fig. 176B An immature Brown Creeper photographed near its nest under a loose strip of bark on a dead tree in Parry Sound District, 25 June 1978. Occasionally creepers nest in cavities. (Photo by G. K. Peck)



Fig. 176A

Fig. 176B





Fig. 177

- Fig. 177 Woodland edge habitat. Shrub growth at woodland edges is a favourite breeding habitat of such species as Mourning Warbler and Indigo Bunting. The photograph was taken near Beverley Swamp, in Hamilton-Wentworth RM, in 1975. (Photo by G. K. Peck)
- Fig. 178A Incubating female Mourning Warbler photographed at Oshawa, Durham RM, 14 July 1967. (Photo by G. K. Peck)
- Fig. 178B Nest and eggs of Indigo Bunting, photographed in Quetico Provincial Park, Rainy River District, 29 June 1976. (Photo by G. K. Peck)



Fig. 178A

Fig. 178B

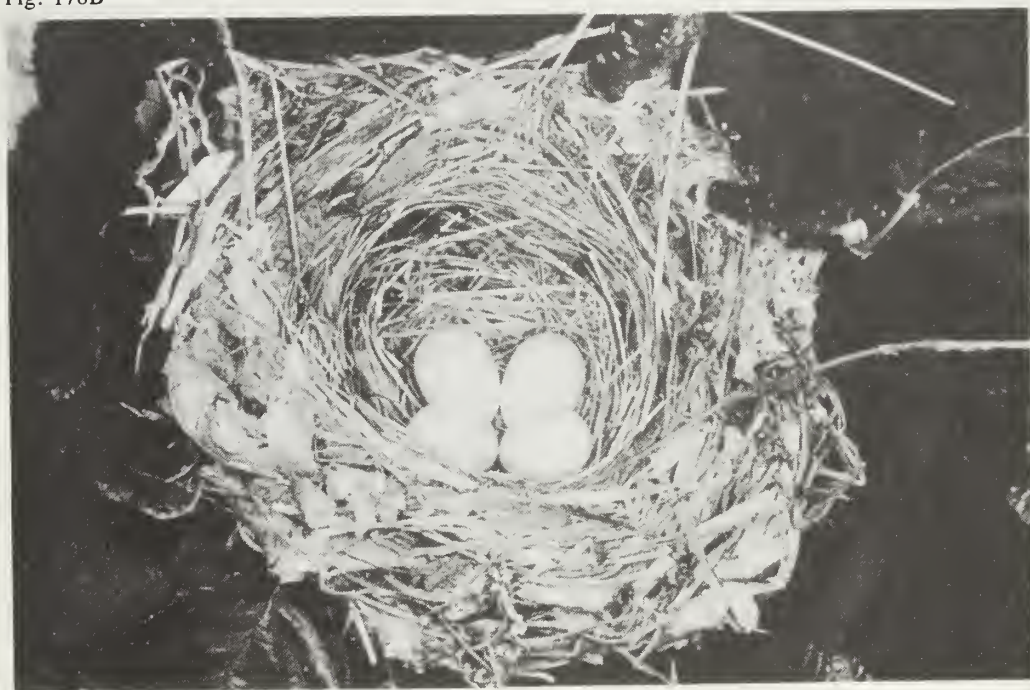




Fig. 179

Fig. 179 Overgrown field habitat. Fields with hawthorns, junipers, and other shrubs or small trees are favourite nesting sites for species such as Cedar Waxwing, Yellow Warbler, Field Sparrow, and American Goldfinch. This photograph was taken in Durham RM in 1969. (Photo by G. K. Peck)

Fig. 180A Nest and eggs of Yellow Warbler photographed in Halton RM, 2 June 1964. (Photo by G. K. Peck)

Fig. 180B Nest and eggs of Field Sparrow in an overgrown field in Halton RM, 20 June 1964. This nest held an "odd" egg, apparently that of a Gray Catbird, which was probably "dumped" in the nest. (Photo by G. K. Peck)



Fig. 180A

Fig. 180B





Fig. 181

Fig. 181 Christmas tree farm habitat. Young conifer plantations have become heavily used by a number of species including Clay-colored Sparrow, Field Sparrow, Chipping Sparrow, Purple Finch, and Brown-headed Cowbird. (Photo by G. K. Peck)

Fig. 182A Clay-colored Sparrow on a nest with eggs on Manitoulin Island, 29 June 1977. (Photo by G. K. Peck)

Fig. 182B Nest and eggs of Clay-colored Sparrow. This western species has been known to hybridize with both Field and Chipping sparrows. Photographed on Manitoulin Island, 29 June 1977. (Photo by G. K. Peck)



Fig. 182A

Fig. 182B





Fig. 183

- Fig. 183 Roadside habitat. Many species take advantage of fence posts, shrubbery, tall grass, trees, utility poles, and wires for nesting or perching sites. This is the location of a Brewer's Blackbird colony in blueberry bushes alongside a road and railway right-of-way at McKerrow, Sudbury District, 2 June 1972. (Photo by G. K. Peck)
- Fig. 184A Nest and eggs of Brewer's Blackbird at McKerrow, Sudbury District, 7 June 1972. (Photo by G. K. Peck)
- Fig. 184B Female Brewer's Blackbird feeding young in Darlington Township, Durham RM, 31 May 1968. This is the most easterly known nesting of this western species in Ontario to date. (Photo by G. K. Peck)



Fig. 184A

Fig. 184B





Fig. 185

- Fig. 185 Tall-grass field habitat. Undisturbed fields with dead grasses from previous years and perhaps a few weeds are needed by such species as Grasshopper and Henslow's sparrows, but are also used by meadowlarks and other ground-nesting species. (Photo by G. K. Peck)
- Fig. 186A A Grasshopper Sparrow at its nest with young in King Township, York RM, 19 June 1966. (Photo by G. K. Peck)
- Fig. 186B A Henslow's Sparrow singing from a territorial perch. Recently colonies of this secretive sparrow have become increasingly rare in Ontario. This bird was photographed in King Township, York RM, 12 July 1966. (Photo by G. K. Peck)



Fig. 186A

Fig. 186B





Fig. 187

Fig. 187 Crop and pasture field habitat. Disturbed fields, often with very short grass or without dead grass from previous years, are still usable by a few species such as Bobolink, Savannah Sparrow, and Vesper Sparrow. (Photo by R. D. James)

Fig. 188A Female Bobolink feeding young at a nest at Luther Marsh, Dufferin County, 17 June 1975. (Photo by G. K. Peck)

Fig. 188B Nest and eggs of Vesper Sparrow, with a Brown-headed Cowbird egg (on the left). (Photo by G. K. Peck)



Fig. 188A

Fig. 188B





Fig. 189

- Fig. 189 Buildings and other manmade structures have become nest sites for a number of species. With some species natural sites have been almost totally abandoned in favour of artificial structures. Cliff Swallows commonly nest under eaves and bridges where the structures form part of the walls or roof of the gourd-shaped mud nests. (Photo by G. K. Peck)
- Fig. 190A A five-tiered nest of an Eastern Phoebe on the inside wall of an abandoned house in Halton RM, photographed 19 July 1964. (Photo by G. K. Peck)
- Fig. 190B This domed nest of a House Sparrow was built over an old American Robin nest on a window ledge. Photographed in Oakville, Halton RM, 14 June 1964. (Photo by G. K. Peck)



Fig. 190A

Fig. 190B





Fig. 191

Fig. 191 Manmade objects, sometimes in or on buildings, are also of importance to several species. The European Starling frequently uses rural mail boxes as nest sites. These young were photographed 28 June 1975, on Pelee Island, Essex County. (Photo by G. K. Peck)

Fig. 192A Nest and eggs of Purple Martin in a compartment of a multiple-unit bird house. The eggs typically lie on fresh leaves as shown here. These eggs were photographed in Oakville, Halton RM, 12 June 1966. (Photo by G. K. Peck)

Fig. 192B Nest and young of Carolina Wren in a six-quart basket, photographed in Cambridge, Waterloo RM, 1 June 1975. (Photo by G. K. Peck)



Fig. 192A

Fig. 192B





Fig. 193

Fig. 193 Urban residential streets with ornamental trees and shrubs are attractive to species such as American Robin, Northern Mockingbird, Common Grackle, and more recently House Finch. (Photo by G. K. Peck)

Fig. 194A House Finch nest and eggs at St Catharines, Niagara RM, 12 July 1984. This species has recently spread into southern Ontario from New York state, where it was introduced from the western United States. (Photo by G. K. Peck)

Fig. 194B The Northern Mockingbird has a more southern origin than its name implies and is widespread, but still relatively rare in Ontario. (Photo by G. K. Peck)



Fig. 194A

Fig. 194B





Fig. 195

Fig. 195 Deciduous forest habitat. Characteristic of the Deciduous Forest region of the southernmost parts of Ontario, stands of pure broad-leaved trees provide habitat for a number of species such as Acadian Flycatchers, Blue-gray Gnatcatchers, Cerulean Warblers, and Hooded Warblers. This was the nest site of a Cerulean Warbler in Halton RM, 6 June 1964. (Photo by G. K. Peck)

Fig. 196A Nest of the Blue-gray Gnatcatcher in a black oak, at a height of 12 m (40 ft) in Rondeau Provincial Park, Kent County, 25 May 1969. (Photo by G. K. Peck)

Fig. 196B Acadian Flycatcher on its nest in Rondeau Provincial Park, at a height of 2.4 m (8 ft) in a beech sapling, 23 July 1969. (Photo by G. K. Peck)



Fig. 196A

Fig. 196B





Fig. 197

Fig. 197 Deciduous swamp habitat. This is the habitat required by the Prothonotary Warbler, although numerous other species occupy such habitat in southern Ontario. This photograph is from Rondeau Provincial Park. (Photo by G. K. Peck)

Fig. 198A Female Prothonotary Warbler at a cavity nest in Rondeau Provincial Park, 7 June 1969. (Photo by G. K. Peck)

Fig. 198B Nest site of a Northern Waterthrush in a swamp in Halton RM, 25 June 1967. This species also ranges much farther north and occupies swamps of many types. (Photo by G. K. Peck)



Fig. 198A

Fig. 198B





Fig. 199

Fig. 199 Marsh habitat. Marshes provide nesting cover for many birds including Marsh Wrens and Yellow-headed Blackbirds. This cattail marsh was photographed in Kent County, 18 May 1968. (Photo by G. K. Peck)

Fig. 200A Male Yellow-headed Blackbird, a western icterid that was first confirmed breeding in Rainy River District in 1961. It continues to breed regularly only in Kent County or Rainy River District. (Photo by G. K. Peck)

Fig. 200B Nest and eggs of Yellow-headed Blackbird in a reed grass marsh. (Photo by G. K. Peck)



Fig. 200A

Fig. 200B





Fig. 201

- Fig. 201 The ubiquitous Red-winged Blackbird nests in both marsh and upland localities. Land clearing by man has no doubt provided conditions to which it could easily adapt, and hence this blackbird has become one of the most numerous birds on the continent. This male was photographed in Durham RM, 22 June 1966. (Photo by G. K. Peck)
- Fig. 202A Red-winged Blackbird nest in a marsh of common reed grass in wet conditions. (Photo by G. K. Peck)
- Fig. 202B An example of a Red-winged Blackbird nest in a small hawthorn in a dry overgrown field in Grey County, 17 July 1984. (Photo by G. K. Peck)



Fig. 202A

Fig. 202B





Fig. 203

Fig. 203 The Brown-headed Cowbird is the only species in Ontario that always lays its eggs in other birds' nests. Here a young cowbird begs food from its foster parent, a Blue-gray Gnatcatcher. The birds were photographed in Halton RM, 26 June 1965. (Photo by G. K. Peck)

Fig. 204A A Brown-headed Cowbird egg in a nest of Red-eyed Vireo, one of the most frequently parasitized hosts, photographed in Halton RM, 2 June 1964. (Photo by G. K. Peck)

Fig. 204B Nest of a Prothonotary Warbler with six eggs of the host and two of the cowbird, Rondeau Provincial Park, 7 June 1969. Cowbirds will deposit eggs in the nests of any small bird, including this cavity-nesting species. (Photo by G. K. Peck)



Fig. 204A

Fig. 204B



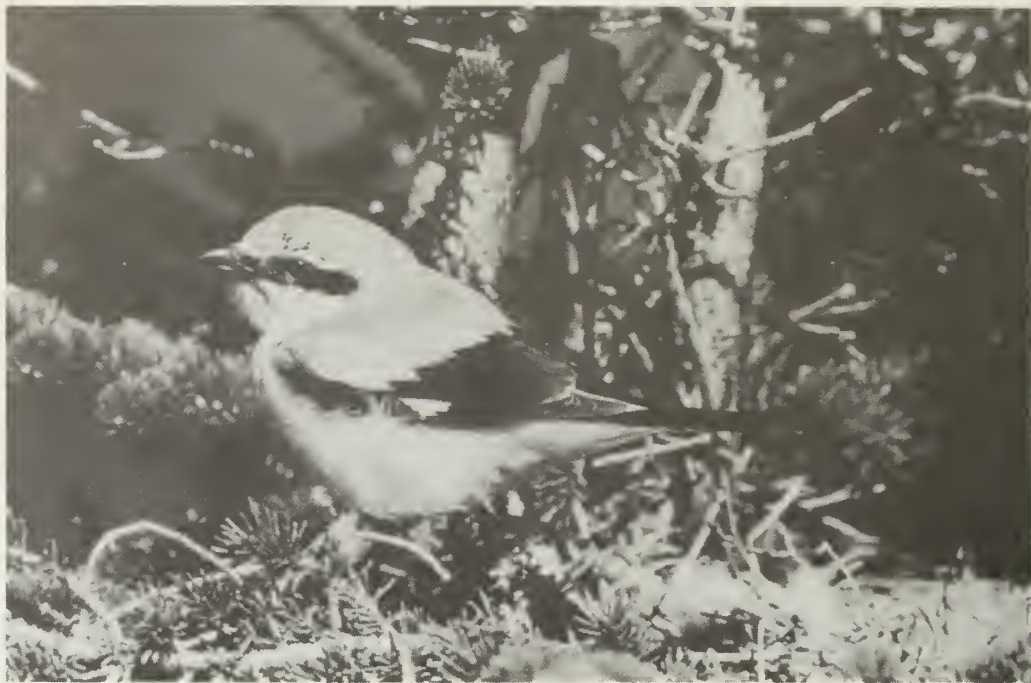


Fig. 205

Fig. 205 The Northern Shrike has only recently been confirmed as breeding in Ontario, and its nest has yet to be discovered. (Photo by G. K. Peck)

Fig. 206A The Bohemian Waxwing is another species whose nest remains to be found in the province, although breeding was confirmed in 1984. (Photo by G. K. Peck)

Fig. 206B The Black-billed Magpie is another species recently discovered breeding in Ontario. Nests were first found in 1980 in western Rainy River District. (Photo by G. K. Peck)



Fig. 206A

Fig. 206B







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